CATALOG 5400-P

Simpson® PANEL INSTRUMENTS

WORLD'S LARGEST SELECTION OF STOCK STYLES, SIZES AND RANGES

PANEL METERS, METER RELAYS, CONTROLLERS AND CHART RECORDERS

SIMPSON ELECTRIC COMPANY
A Katy Industries, Inc. Subsidiary
853 Dundee Avenue, Elgin, Illinois 60120-3090
(312) 697-2260 • Telex 72-2416 • Cable SIMELCO

Simpson Analog and Digital Test Equipment Is Featured in New Catalog 5500 TE

1984 - OUR 50th ANNIVERSARY YEAR

MIL SPEC PANEL METERS Available From Leading Simpson Distributors

For over 40 years, Simpson has been a prime supplier to the U.S. Defense Department and to government contractors with MR-type, sealed, ruggedized panel meters to meet MIL M-10304 specifications. Simpson MR meters are available in 2½", 3½" and 4½" sizes. We can also supply custom ranges and scales. Simpson is QPL'd (Qualified Products List) on the following ranges.

APPROVED RANGES	MR 26 Type 2½" Models 125R	125RT*	135R	155R	MR 36 Type 3½" Models 25R	25RT*	35R	55R	MR 46 Type 4½" Models 18R, 18RT**
DC Ranges:									
Microammeters	50 μA-500 μA	50 μA-500 μA	—	—	100 μA-200 μA	50 μA-500 μA	—	—	50 μA
Milliammeters	1 mA-500 mA	—	—	—	1 mA-500 mA	—	—	—	1 mA
Ammeters	1 A-500 A	—	—	—	1 A-500 A	—	—	—	—
Voltmeters	2 V-500 V	—	—	—	2 V-800 V	—	—	—	
Kilovoltmeters	1 kV-30 kV	—	—	—	1 kV-30 kV	—	—	—	—
AC Ranges:									
Milliammeters	—	—	100 mA-500 mA‡	—	—	—	100 mA-500 mA‡	10 mA-500 mA†	—
Ammeters	—	—	1-20 A	1 A-500 A	—	—	1 A-20 A	1 A-500 A	—
Voltmeters	—	—	—	2 V-800 V†	—	—	—	1 V-800 V	—

*Taut Band
**Taut Band, 50 μA Only
‡RF milliammeters
†(60, 400, 800 Hz)

Product Index

PANEL METERS

Type	Wide-Vue	Bold-Vue	Century Series	Designer Series	Round, Rectangular	Edge-wise	Metal Cased	Digital	Long Scale	ANA LED
DC	6, 7, 8	9	10, 11, 14	9	12, 13, 16	18-19	15	3, 4, 5	14	27
AC	8	9	11	9	13,14	18-19	15	—	14	27
RF	8	—	11	—	14	—	—	—	—	
dB, VU	8	—	11	9	14	18	—	—	—	
Wattmeters	8	—	11	—	14	—	—	—	—	
Percent Load	17	17	17	—	—	—	—	—	—	
Elapsed Time	20	—	20	—	20	—	—	—	—	
Frequency	—	—	20	—	16, 20	—	—	—	—	
Segmental	16	—	16	—	16	—	16	—	—	
Pyrometers	—	—	17	—	17	—	17	—	—	
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SIMPSON offers the widest selection of analog, digital and ANA LED panel meters, meter relays and controllers. Over 2,000 stock ranges, sizes and styles are available from leading electrical/electronic distributors worldwide.

Index by Model Number

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MANUFACTURED IN U.S.A.

Series 2840 4½-Digit Digital Panel Instruments

Self-contained panel-mounted 4½-digit DPMs, especially suited for system applications where extra 0.02% accuracy and 10 μV resolution are needed.

Utilize solid-state integrated circuit electronics, with bright red 0.43″ LED display.

- 4½-digit (19999 counts) readout
- Automatic polarity indication and zero
- 0.02% of reading accuracy on DC V ranges
- State-of-the-art LSI circuitry
- 120 V AC, 50-400 Hz or 5 V DC operation
- Input/output edge connector included
- Fits standard 1.682″ x 3.622″ cutout. With adapters, fits IEC/DIN 1.77″ x 3.622″ or 1.682″ x 3.92″ cutouts

ALSO AVAILABLE ON SPECIAL ORDER:

- Display hold
- Custom ranges
- BCD output
- 220/240 V AC power
- Programmable decimal point

MODELS 2840, 2841 SPECIFICATIONS:

Accuracy: (At Reference Conditions)
DC Voltage: ±(0.02% of reading + 1 digit)
DC Current: ±(0.05% of reading + 1 digit)
Temperature Coefficient:
DC Voltage: ±(0.003% of reading +0.1 digit)/°C
DC Current: ±(0.01% of reading +0.1 digit)/°C
Sensitivity: 10 μV, 200 mV unit; 10 nA, 200 μA unit
Resolution: One part in 20,000
Input Bias Current: 100 pA maximum at reference conditions
Full Range Step Response: (to rated accuracy) 1 second maximum
Normal Mode Rejection: 60 dB minimum at 60 Hz
Common Mode Rejection: 120 dB minimum (2840 only) (with 1 kΩ unbalance at 60 Hz)
Rated Circuit-To-Ground Voltage (maximum common-mode voltage): 250 V DC between either input terminal and power line ground (2840) or 5 V DC (2841)
Conversion:
Technique: Charge balance
Rate: 2 samples per second, nominal
Display:
Type: 7-segment, high-efficiency light emitting diodes with 0.43″ high numerals
Number of Digits: 4 full digits plus overrange "1" digit
Polarity: Automatic, with "−" indication; "+" indication implied
Out-of-Range: All digits blink
Decimal Point: Fixed with range
Power Requirements:
Model 2840: 120 V AC Std., (220 or 240 V optional) ±10%, 50 Hz to 400 Hz, 4 VA
Model 2841: 5 V DC, ±5% at 750 mA
Temperature Range:
Operating: 0°C to +55°C
Storage: −40°C to +60°C
Relative Humidity: 0 to 85%, non-condensing

Reference Conditions:
Temperature: +23°C, ±2°C
Atmospheric Pressure: 575 to 800 mmHg
Relative Humidity: 30 to 60%
Warm-up Time: 15 minutes at reference conditions
Weight: 1 lb. (435 g) approx.
Dimensions:
Instrument: 3.9″ x 1.93″ x 4.27″ (99 x 49 x 109 mm)
Panel Cutout: 3.622 x 1.68″ (92 x 42.72 mm)
With Optional Adapters: 92 x 45 mm (3.622 x 1.77″) for DIN or IEC cutout; 99.57 x 42.72 mm (3.92 x 1.68″) for other domestic cutout

Model 2840, 120 V AC input, 0.43″ LED display, complete with panel mounting clips, edge connector and manual ..... **$199.05** each

Model 2841, 5 V DC input, 0.43″ LED display, complete with panel mounting clips, edge connector and manual ..... **199.05** each

STOCK RANGES

DC Voltage:

Ranges	Maximum Indication	Input Resistance	Overload Protection	CATALOG NUMBERS Model 2840	Model 2841
200 mV	±199.99 mV	100 MΩ	250 V	24800	24826
2 V	±1.9999 V	100 MΩ	250 V	24801	24827
20 V	±19.999 V	10 MΩ	250 V	24802	24828
200 V	±199.99 V	10 MΩ	250 V	24803	24829

DC Current:

Range	Maximum Indication	Voltage Drop	Max. Input Current	CATALOG NUMBERS Model 2840	Model 2841
200 μA	±199.99 μA	200 mV	20 mA	24804	24830
2 mA	±1.9999 mA	200 mV	20 mA	24805	24831
20 mA	±19.999 mA	200 mV	100 mA	24806	24832
200 mA	±199.99 mA	200 mV	1 A	24807	24833

OPTIONAL MOUNTING HARDWARE FOR ALL MODELS

Adapter for IEC/DIN cutouts, Catalog No. 22992 .... **$4.75**
Adapter for domestic 3.682″ x 2.920″ cutout, Catalog No. 22993 ..... **4.75**
"U" Type Mounting Bracket, Catalog No. 22991 ..... **4.75**
Extra Edge Connector, Catalog No. 22990 ..... **5.50**

Simpson® Digital Panel Meters

Model 2865/2866 0.43″ LED Display

Series 2865 DPM . . . High Performance at a Low Price

A unique value-designed unit makes it possible to offer a digital panel meter for a price which rivals that of a quality analog meter. A single LSI chip contains all analog to digital circuitry and provides new reliability yet reduces cost. These compact rugged units are available for 5 V DC or 120 V AC input power. All have 0.1% accuracy and 0.43″ LED display. Adapters are available for mounting in IEC/DIN cutouts or 1.682″ x 3.92″ cutouts.

- Bright red 0.43″ LED display
- 3½ digit (1999 counts) readout
- Automatic zero and polarity indication
- 0.1% of reading accuracy
- State-of-the-art LSI circuitry
- 120 V AC, 50-400 Hz or 5 V DC operation
- Fits standard 1.682″ x 3.622″ cutout. With adapters, fits IEC/DIN 1.77″ x 3.622″ or 1.682″ x 3.92″ cutouts
- Input/output edge connector included

ALSO AVAILABLE ON SPECIAL ORDER:

- Remote decimal point
- Custom DC ranges
- 220/240 V AC power

Model 2865, 120 V AC power input, complete with panel mounting clips, edge connector and manual . . . . . **$114.75** each

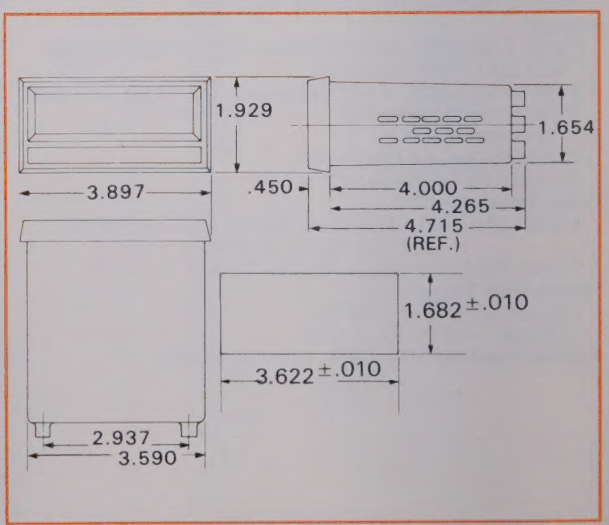
Model 2866, 5 V DC power input, complete with panel mounting clips, edge connector and manual . . . . . **101.25** each

STOCK RANGES

DC Voltage:				CAT. NUMBERS	
Range	Maximum Indication	Input Resistance	Overload Protection	Model 2865	Model 2866
200 mV	±199.9 mV	⩾100 MΩ	350 V	24500	24600
2 V	±1.999 V	⩾100 MΩ	All	24501	24601
20 V	±19.99 V	10 MΩ	Ranges	24502	24602
200 V	±199.9 V	10 MΩ		24503	24603
DC Current:				**CAT. NUMBERS**	
Range	Maximum Indication	Maximum Input Current	Voltage Drop, FS	Model 2865	Model 2866
20 μA	±19.99 μA	20 mA		24504	24604
200 μA	±199.9 μA	20 mA	200 mV	24505	24605
2 mA	±1.999 mA	20 mA	All	24506	24606
20 mA	±19.99 mA	100 mA	Ranges	24507	24607
200 mA	±199.9 mA	1 A		24508	24608

MODELS 2865, 2866 SPECIFICATIONS:

Accuracy: ±(0.1% of reading + 1 digit) at reference conditions
Temperature Coefficient: ±(0.01% of reading + 0.05 digit) per °C, from 0°C to 55°C
Sensitivity: 100 μV for 200 mV unit: 10 nA for 20 μA unit
Resolution: One part in 2,000
Input Bias Current: 10 pA maximum at reference conditions
Response Time (to rated accuracy): Less than 800 milliseconds
Normal Mode Rejection: 50 dB minimum at 60 Hz
Common Mode Rejection (with 1 kΩ unbalance at 60 Hz): 90 dB minimum
Rated Circuit-To-Ground Voltage: 2865: 250 V DC between either input terminal and powerline ground. **2866:** −4.06 to +4.5 V DC between the common (−) input terminal and the power source common (5 V DC return)
Conversion:
Technique: Up-down integration
Rate: 2.5 samples per second nominal
Display:
Type: 7-segment, light emitting diodes with 0.43″ high numerals
Number of digits: 3½ full digits
Polarity: Automatic, with "−" indication, "+" indication implied
Out-of-Range: All digits blank, except "1" digit above 1999 counts
Decimal Point: Fixed with range
Power Requirement:
Model 2865: 120 standard, or optional 220-240 V AC ±10%, 50 Hz to 400 Hz, 3 VA
Model 2866: 5 V DC, ±5% @ 200 mA
Temperature Range:
Operating: 0°C to +55°C
Storage: −40°C to +60°C
Relative Humidity: 0 to 85%, non-condensing
Reference Conditions:
Temperature: 23°C ±2°C
Atmospheric Pressure: 575 to 800 mmHg
Relative Humidity: 30 to 60%
Warm-Up Time: Less than 2 minutes at reference conditions
Dimensions:
Instrument: 3.9″ x 1.93″ x 4.27″ (99 x 49 x 109 mm)
Panel Cutout: 3.622″ x 1.68″ (92 x 42.72 mm)
With Optional Adapters: 92 x 45 mm (3.622″ x 1.77″) IEC or DIN; 99.57 x 42.72 mm (3.92″ 1.68″) popular domestic
Weight: Approximately 1 lb. (453 g)



—Prices Are Suggested and Subject to Change Without Notice—

Simpson® Digital Panel Meters

MANUFACTURED IN U.S.A.

Deluxe Series 2850 DPM with CMOS BCD Output Capability and Options for Custom Applications

The 2850 series of digital panel meters are compact, ruggedly-built DPMs that offer either Planar gas discharge or LED displays. Both types are available with 5 volts DC or AC line input power. Adapters are available for mounting in IEC/DIN cutouts as well as in 1.682″ x 3.92″ cutout.

All units have 0.1% accuracy and BCD output is standard. Specials including AC ranges are available.

- 0.55″ planar gas discharge display: Models 2850 and 285I
- 0.43″ LED display: Models 2852 and 2853
- 3½ digit readout
- 0.1% of reading accuracy
- Highly reliable LSI circuitry
- Automatic zero and polarity
- BCD output is standard
- 120 V AC, 50-400 Hz or 5 V DC operation
- Input/output edge connector included
- Fits standard 1.682″ x 3.622″ cutout. With adapters, fits IEC/DIN 1.77″ x 3.622″ or 1.682″ x 3.92″ cutouts

AVAILABLE ON SPECIAL ORDER:

- AC voltage and current ranges
- DC zero offset
- Display hold
- Custom ranges
- 220/240 V AC power
- Programmable decimal point

MODELS 2850, 2851, 2852, 2853 SPECIFICATIONS:

Display:
Type: 7-segment, planar gas-discharge with 0.55″ high numerals or 0.43″ 7-segment LED
Number of Digits: 3½
Polarity: Automatic, with "+" or "−" indication
Out-Of-Range: All digits blink
Decimal Point: Fixed with range

Accuracy: ±(0.1% of reading + 1 digit), +15° to +55°C

Temperature Coefficient: ±(0.01% of reading +0.05 digit) per °C, from 0°C to +55°C

Sensitivity: 100 μV for 200 mV unit; 10 nA for 20 μA unit

Resolution: 1 part in 2,000

Input Bias Current: 40 pA maximum at reference conditions

Response Time (to rated accuracy): < 800 msec.

Normal Mode Rejection: 55 dB minimum at 60 Hz

Common Mode Rejection (with 1 kΩ unbalanced at 60 Hz):
Model 2850, 2852: 90 dB minimum
Model 2851, 2853: 60 dB minimum

Rated Circuit-to-Ground Voltage (Maximum Common Mode Voltage): 350 V DC between either input terminal and power line ground (2850, 2852) or 5 V DC (2851, 2853)

Conversion:
Technique: Charge-balance
Rate: 4 samples per second, nominal

Power Requirement:
Model 2850, 2852: 120 V AC standard or 240 V AC optional ±10%, 50 Hz to 400 Hz, 4 VA
Model 2851, 2853: 5 V DC, ±5% @ 700 mA

Temperature Range:
Operating: 0°C to +55°C
Storage: −40°C to +60°C

Relative Humidity: 0 to 90%, non-condensing

Reference Conditions:
Temperature: 23°C ±2°C
Atmospheric Pressure: 575 to 800 mm Hg
Relative Humidity: 30 to 60%

Warm-Up Time: < 2 min. at reference conditions

Models 2850/2851 0.55″ Planar Gas Discharge Display

Models 2852/2853 0.43″ LED Display

BCD Outputs:
Logic Form: CMOS compatible, positive logic 1-2-4-8 code, parallel bit, serial in digit format
Logic Levels: "0" = 0 to +0.4 V DC
"1" = +2.4 to +5.25 V DC
Multiplex Sequence: A1 (LSD), A3, A2 and A4 (MSD)

Weight: 1 lb. (435 g) approx.

Dimensions:
Instrument: 3.9″ x 1.93″ x 4.27″ (99x49x109 mm)
Panel Cutout: 3.622 x 1.68″ (92x42.72 mm)
With Optional Adapters: 92 x 45 mm (3.622x1.77″) for DIN or IEC cutout 99.57 x 42.72 mm (3.92″ x 1.68″) for other domestic cutout

Model 2850, 120 V AC input; 0.55″ planar gas discharge display, complete with panel mounting clips, edge connector and manual . . . . . **$188.25** each

Model 2851, 5 V DC input, 0.55″ planar gas discharge display, complete with panel mounting clips, edge connector and manual . . . . . **188.25** each

Model 2852, 120 V AC input, 0.43″ LED display, complete with panel mounting clips, edge connector and manual . . . . . **188.25** each

Model 2853, 5 V DC input, 0.43″ LED display, complete with panel mounting clips, edge connector and manual . . . . . **188.25** each

STOCK RANGES

DC Voltage

Ranges	Maximum Indication	Input Resistance	Overload Protection	CATALOG NUMBERS Model 2850	Model 2851	Model 2852	Model 2853
200 mV	±199.9 mV	⩾100 MΩ	350 V All Ranges	22984	24101	24110	24119
2 V	±1.999 V	⩾100 MΩ		22976	24102	24111	24120
20 V	±19.99 V	10 MΩ		22977	24103	24112	24121
200 V	±199.9 V	10 MΩ		22978	24104	24113	24122

DC Current:

Ranges	Maximum Indication	Voltage Drop, FS	Maximum Input Current	CATALOG NUMBERS Model 2850	Model 2851	Model 2852	Model 2853
20 μA	±19.99 μA	200 mV All Ranges	20 mA	22979	24105	24114	24123
200 μA	±199.9 μA		20 mA	22980	24106	24115	24124
2 mA	±1.999 mA		20 mA	22981	24107	24116	24125
20 mA	±19.99 mA		100 mA	22982	24108	24117	24126
200 mA	±199.9 mA		1 A	22983	24109	24118	24127

OPTIONAL MOUNTING HARDWARE FOR ALL MODELS

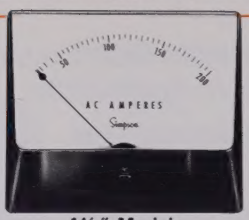
Adapter for IEC/DIN cutouts, Catalog No. 22992 . . . . . **$4.75**
Adapter for domestic 3.92″ x 1.68″ cutout, Catalog No. 22993 . . . . . **4.75**
"U" Type Mounting Bracket, Catalog No. 22991 . . . . . **4.75**
Extra Edge Connector, Catalog No. 22990 . . . . . **5.50**

Simpson® Wide-Vue™ Panel Meters

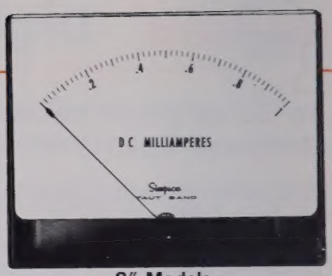
1½" Models

2½" Models

3½" Models



4½" Models



8" Models

- Distinctive Case Style
- Phenolic Cases with Clear Acrylic Windows
- Wide-Angle Visibility

CALIBRATION—All DC Wide-Vue meters listed have the Simpson self-shielded movement—calibration is not affected by stray magnetic fields or magnetic mounting.

AC meters have either iron-vane type or rectifier type movements. All calibrated at 60 Hz. Iron-vane type ammeters and milliammeters have frequency range (for ±1% deviation from value at 60 Hz) of 25 to 800 Hz. Iron-vane voltmeters have range of 25 to 125 Hz. Calibration to 800 Hz available on special order. All rectifier types have 25 Hz to 10 kHz range.

*External multipliers (Model 183) are furnished on 1½" DC meters 500 volts or higher; on 2½" DC meters 750 volts or higher; and on 3½" and 4½" DC meters 1000 volts or higher. All others have self-contained multipliers.

†1½" DC ammeters are self-contained through 10 amps. 15 amps and higher are supplied as 50 mV meters to be used with external shunts. 2½", 3½" and 4½" DC ammeters are self-contained through 50 amps. Higher range DC ammeters are 50 mV meters to be used with external shunts. Shunt listings are on page 26.

SPECIFICATIONS

Case Size	Type and Model Number: DC	AC Rectifier Iron-Vane		RF	Watt	Accuracy	Scale Length	Pointer
1½"	1212,1212T	1214	—	—	—	DC; RF; AC Iron-Vane; Wattmeters* ±2%	1.50" (38.1 mm)	Lance, Black
2½"	1227,1227T	1247	1257	—	—		2.30" (58.4 mm)	
3½"	1327,1327T	1347	1357	1337	—		3.14" (79.7 mm)	Spade, Black
4½"	1329,1329T	1349	1359	1339	1379		3.93" (100.00 mm)	
8"	728T	—	—	—	—	AC Rectifier Meters ±3%	6.9" (174.2 mm)	

*Compensated Wattmeters ±3%

STOCK RANGES

Range	Approx. Resistance (Ohms)	1½" Case Style Cat. No.	1½" Case Style Price	2½" Case Style Cat. No.	2½" Case Style Price	3½" Case Style Cat. No.	3½" Case Style Price	4½" Case Style Cat. No.	4½" Case Style Price
DC VOLTMETERS Self-shielding meter movement		Model 1212		Model 1227		Model 1327		Model 1329	
0-5	1000 ohms per volt	09540	$39.30	09550	$42.00	09720	$43.20	09870	$46.95
0-8		—		—		09730		09880	
0-10		09541		09560		09740		09890	
0-15		09542		09570		09750		09900	
0-25		09543		09580		09760		09910	
0-30		09544		09590		09770		09920	
0-50		09545		09600		09780		09930	
0-100		09546		09610		09790		09940	
0-150		09547		09620		09800		09950	
0-200		—		09622		09810		09960	
0-250		—		09623		09820		09970	
0-300		—		09630		09830		09980	
0-300	2000 ohms per volt	09548	39.30	—		—		—	
0-500		09549*	48.60	09640	43.20	09840	45.45	09990	48.90
0-750		—		09650*	52.20	09850	45.45	10000	48.90
0-1000		—		09660*	54.00	09860*	55.35	10010*	59.25
DC AMMETERS Self-shielding meter movement									
0-1	.050	02431		02440		02640		02820	
0-1.5	.033	—		02450		02650		02830	
0-2	.025	02432		02460		02660		02840	
0-3	.0166	02433		02470		02670		02850	
0-5	.010	02434		02480		02680		02860	
0-10	.005	02435		02490		02690		02870	
0-15	.0033	02436†		02500		02700		02880	
0-25	.0020	02437†	39.30	02510	40.05	02710	42.00	02890	45.45
0-30	.0017	—		02520		02720		02900	
0-50	.001	02438†		02530		02730		02910	
0-100	10.0	—		02540†		02740‡		02920†	
0-150	10.0	—		02550†		02750†		02930†	
0-200	10.0	—		02552†		02760†		02940†	
0-300	10.0	—		02554†		02770†		02950†	
0-500	10.0	—		—		02780†		02960†	
15-0-15	.0033	—		—		02790		—	
30-0-30	.0017	—		—		02800	43.95	—	
50-0-50	.001	—		—		02810		—	

Wide-Vue Mounting Bezels

Mounting bezels for that modern, streamlined appearance—made for Wide-Vue panel meters and interchangeable with flush and recess type meters of many popular styles. Designed for behind panel mounting on material thickness of 1/16" to 1/4".

Groove and flange style construction. Each bezel of die cast metal has an attractive black enamel satin finish and is supplied with mounting hardware and template.

Bezel mount kit consists of bezel, brackets and screws, and installation instructions. Dimensions on page 7.

WIDE-VUE MOUNTING BEZEL KITS

Meter Size	For Models	Cat. No.	Price
3½"	1327, 1337 1347, 1357	01253	$5.55
4½"	1329, 1339, 1349, 1359, 1379	01123	5.55
Illumination Kit		01165	5.40

—Prices Are Suggested and Subject to Change Without Notice—

STOCK RANGES

Range	Approx. Resistance (ohms)†	1½" Case Style Cat. No.	1½" Case Style Price	2½" Case Style Cat. No.	2½" Case Style Price	3½" Case Style Cat. No.	3½" Case Style Price	4½" Case Style Cat. No.	4½" Case Style Price
DC MILLIVOLTMETERS Self-shielding movement									
		Model 1212		Model 1227		Model 1327		Model 1329	
0-50	10.0	07005	$39.30	07010	$40.05	07020	$42.00	07030	$45.15
50-0-50	20.0	—		—		07021	42.00	07031	45.15
DC MILLIAMMETERS Self-shielding meter movement									
0-1	43.0	06163		06175		06310		06470	
0-3	2.0	—		06180		06320		06480	
0-5	2.0 (20†)	06164	37.35	06190	39.60	06330	40.35	06490	43.20
0-10	10.0 (2.2†)	06165		06200		06340		06495	
0-15	6.6 (2.2†)	06166		06210		06350		06502	
0-20	5.0	—		06215		06360		06524	
0-25	4.0 (6.0†)	06167		06220		06370		06530	
0-50	2.0 (3.0†)	06168		06230		06380		06540	
0-100	1.0 (1.5†)	06169		06240		06390		06550	
0-150	.66 (1.0†)	06170		06250		06400		06560	
0-200	.50 (.75†)	06171	39.30	06260	40.05	06410	42.00	06570	45.45
0-250	.40 (.60†)	06172		06270		06420		06580	
0-300	.33 (.50†)	06173		06280		06430		06590	
0-500	.20 (.30†)	06174		06290		06440		06600	
0-750	.13	—		—		06450		06610	
0-1000	.05	—		06292		06460		06620	
DC MICROAMMETERS Self-shielding meter movement									
0-50	1800 (5500†)	04294	48.90	04310	50.25	04380	51.30	04480	55.05
0-100	1800	04295	43.65	04320	45.45	04390	46.95	04490	52.20
0-200	1100	04296	39.90	04330	41.40	04400	43.20	04500	46.95
0-500	90 (190†)	04297	39.30	04340	40.35	04410	42.45	04510	46.20
25-0-25	1800 (5500†)	04298	49.35	—		04420	51.75	04520	55.35
50-0-50	1800	04302	43.95	04350	46.20	04430	46.95	04530	52.50
100-0-100	1100	04300	40.05	04351	42.00	04440	43.65	04540	47.70
500-0-500	43	04301	38.10	04352	39.90	04450	41.40	04550	43.65

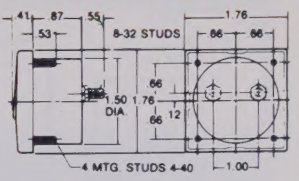
†Resistances of Model 1212 shown in ( )

Range	Approx. Resistance (ohms)	1½" Case Style Cat. No.	1½" Case Style Price	2½" Case Style Cat. No.	2½" Case Style Price	3½" Case Style Cat. No.	3½" Case Style Price	4½" Case Style Cat. No.	4½" Case Style Price	8" Case Style Cat. No.	8" Case Style Price
TAUT-BAND DC MILLIAMMETER Self-shielding meter movement											
		Model 1212T		Model 1227T		Model 1327T		Model 1329T		Model 728T	
0-1	10.0	—		—		—		—		11210	$73.05
TAUT-BAND DC MICROAMMETERS Self-shielding meter movement											
0-5	5750	—		—		04358	$94.50	04458	$100.65	—	
0-10	4900	—		04303	$79.65	04359	83.25	04459	90.00	—	
0-15	1960 (5000†)	04601	$73.05	04304	73.05	04361	74.40	04461	80.85	—	
0-25	1960 (5780‡)	04602	67.65	04306	69.15	04371	72.45	04471	78.45		
0-50	960 (1600‡)	04603	53.55	04311	54.30	04381	55.35	04481	59.85	11201	79.50
0-100	500	04604	47.70	04321	49.65	04391	51.30	04491	56.55	11203	77.25
0-200	234	04605	44.40	04331	46.50	04401	48.60	04501	53.55	—	

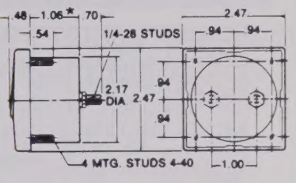
†Resistances of Model 1212T shown in ( )
‡Resistances of Model 728T shown in ( )

Additional Wide-Vue Listings on Following Page

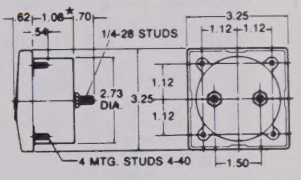
WIDE-VUE DIMENSIONS



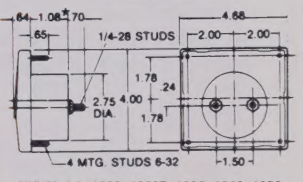
1½" Models 1212, 1212T, 1214



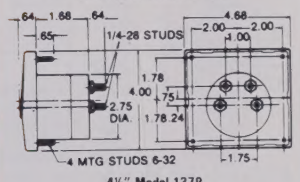
2½" Models 1227, 1227T, 1237, 1247, 1257
*1257 Barrel Dimension 1.15



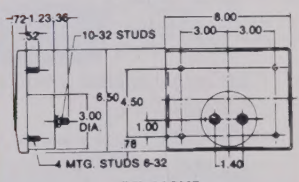
3½" Models 1327, 1327T, 1337, 1347, 1357
*1357 Barrel Dimension 1.22



4½" Models 1329, 1329T, 1339, 1349, 1359
*1359 Barrel Dimension 1.20

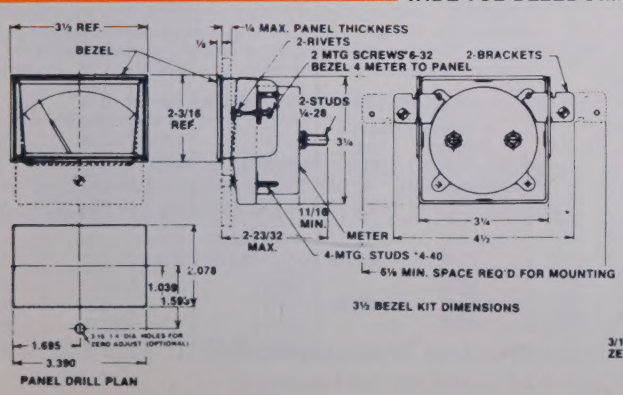


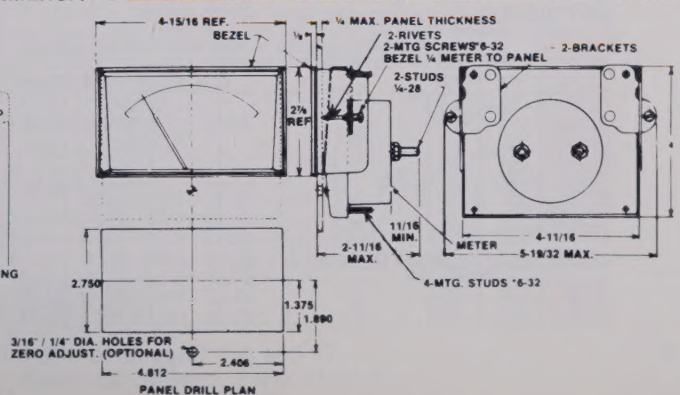
4½" Model 1379



8" Model 728T

WIDE-VUE BEZEL DIMENSIONS





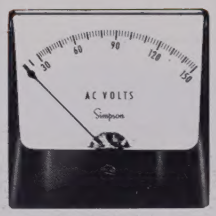
Simpson® Wide-Vue Panel Meters (continued)

MANUFACTURED IN U.S.A.

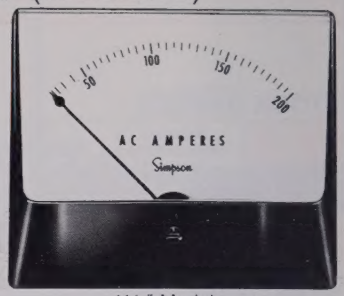
1½" Models

2½" Models

3½" Dual Range



3½" Models



4½" Models

Wide-Vue Panel Meters in 1½", 2½", 3½", 4½" Sizes

Range	Approx. Impedance (ohms) @ 60 Hz	2½" Case Style Cat. No.	2½" Case Style Price	3½" Case Style Cat. No.	3½" Case Style Price	4½" Case Style Cat. No.	4½" Case Style Price
AC VOLTMETERS Iron-vane type movement		Model 1257		Model 1357		Model 1359	
0-5	33	—		10160		10260	
0-10	133	09670		10170		10270	
0-15	300	09675	$38.10	10180	$39.90	10280	$44.40
0-25	833	09680		10190		10290	
0-50	3,333	09690		10200		10300	
0-100	16,666	09695	39.30	10210	41.40	10310	
0-150	25,000	09700		10220		10320	
0-250	41,166	09705	39.90	10230	42.45	10330	45.45
0-300	50,000	09710		10240		10340	
0-500††	83,333	09715	50.25	10250	53.85	10350	57.30
AC AMMETERS Iron-vane type movement							
0-1	.213	02560		03130		03260	
0-1.5	.105	02570		03140		03270	
0-2	.065	—		03150		03280	
0-3	.028	02575	36.30	03160	38.10	03290	40.20
0-5	.008	02580		03170		03300	
0-10	.004	02590		03180		03310	
0-15	.0025	02599		03190		03320	
0-25	.002	02609		03200		03330	
0-30	.0015	02615	37.35	03205	39.60	03335	42.00
0-50	.001	02619		03210		03340	
0-75	.0002	—		03215	42.45	03345	45.45
0-100	.008	02622‡		03220‡		03350‡	
0-150	.008	02624‡	36.30	03230‡	38.10	03360‡	40.20
0-200	.008	02626‡		03240‡		03370‡	
0-300	.008	02627‡		03250‡		03380‡	
AC DUAL RANGE Ammeter/voltmeter models							
0-150V and 0-5A	15030 and .021	—		03129	54.00	03259	57.45
AC MILLIAMMETERS Iron-vane type movement							
0-10	1,650	06294		06625		06665	
0-50	80	06295		06630		06670	
0-100	17.2	06296	36.30	06640	38.10	06680	40.20
0-250	3.15	06297		06650		06690	
0-500	0.9	06300		06660		06699	
WATTMETERS Dynamometer type, single phase ±2% fs							
Range Watts	Range Volts	Max. Amps	Wattmeters calibrated for either magnetic or non-magnetic panels and for a frequency range of 25-125 Hz. Model 1379				
0-75	150	1.0	—		—	10960	
0-150	150	2.0	—		—	10970	102.75
0-300	150	4.0	—		—	10975	
0-600	300	4.0	—		—	10980	
0-750	150	10.0	—		—	10990	109.20
0-1500	300	10.0	—		—	11000	
0-3000	300	20.0	—		—	11010	
COMPENSATED WATTMETERS Accuracy ±3% fs							
0-10	300	.175	—		—	10930	137.40
0-20	300	.400	—		—	10940	137.40

††External multipliers, Model 183 (featured on page 26), are furnished on AC meters having a range of 500 volts or higher. All others have self-contained multipliers.

‡2½" AC ammeters are self-contained through 50 amps. 3½" and 4½" AC ammeters are self-contained through 75 amps.

Higher range AC ammeters are 5 amp meters to be used with external current transformer. See page 26 for listing of current transformers.

STOCK RANGES

Range	Approx. Resistance (ohms)	1½" Case Styles Cat. No.	1½" Case Styles Price	2½" Case Styles Cat. No.	2½" Case Styles Price	3½" Case Styles Cat. No.	3½" Case Styles Price	4½" Case Styles Cat. No.	4½" Case Styles Price
RF AMMETERS Self-shielding						Model 1337		Model 1339	
0-1	.343	—		—		02970		03050	
0-1.5	.200	—		—		02980		03060	
0-2	.120	—		—		02990		03070	
0-2.5	.10	—		—		03000		03080	
0-3	.08	—		—		03010	$47.70	03090	$54.30
0-5	.045	—		—		03020		03100	
0-8	.031	—		—		03030		03110	
0-10	.023	—		—		03040		03120	
RF MILLIAMMETERS Self-shielding									
0-500	.63	—		—		05362	56.40	05364	63.30

Range		Model 1214 Cat. No.	Model 1214 Price	Model 1247 Cat. No.	Model 1247 Price	Model 1347 Cat. No.	Model 1347 Price	Model 1349 Cat. No.	Model 1349 Price
AC VOLTMETERS RECTIFIER TYPE Self-shielding									
0-5		10011		10015		10020		10090	
0-10	2000	10012		10016		10030		10100	
0-15	ohms	—	$53.55	—	$49.65	10040	56.55	10110	62.55
0-50	per	—		—		10050		10120	
0-150	volt	10013		10017		10060		10130	
0-300		10014		10018		10070		10140	

DECIBEL METERS Zero power level: 6 mW into 500 Ω line. Self-shielding

Range									
-10 to +6 dB	5000	—		03483	55.05	03485	58.65	03487	60.45

VU (Volume Level) METERS† Reference level: 1 mW into 600 Ω line. Self-shielding

Scale	Model 1214		Model 1247		Model 1347		Model 1349	
A—Scale	10472	59.25	10474	65.55	10480	66.75	10490	73.05
B—Scale	—		—		10550	66.75	10560	73.05

†Simpson VU meters meet all electrical and ballistic specifications established by Bell Laboratories and American Standards Association as required by broadcasting, communication and sound engineers. They are available with either type A or B scales. Type A scale stresses the level in VU for monitoring wire lines. Type B scale stresses percent use of transmitter output and is the standard for broadcast service. Impedance is 3900 Ω @ "0" VU deflection.

DC GALVANOMETERS Self-shielding

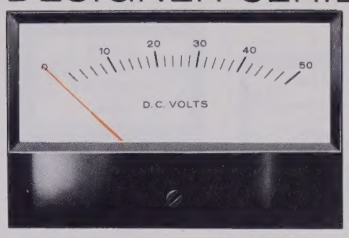
Range	Sensitivity (microamperes)	Resistance (ohms)	Model 1227		Model 1327		Model 1329	
50-0-50	500-0-500	43	03700	39.60	03730	39.60	03732	43.65
50-0-50	75-0-75	1800	03710	42.45	03720	46.20	03734	50.25

Simpson® Designer and Bold-Vue Panel Meters

SPECIFICATIONS	Model 523	Model 543	Model 553	Model 524	Model 544	Model 554
Case Size	3½"	3½"	3½"	4½"	4½"	4½"
Scale Length	2.92" (74.2 mm)	2.69" (68.3 mm)	3.25" (82.5 mm)	2.84" (72.1 mm)		

All Models: ±2% accuracy, knife edge pointer, black phenolic case with glass window

DESIGNER SERIES



Clean, uncluttered look. Maximum readability in minimum height.

STOCK RANGES

Range	Approx. Resist. (ohms)	3½" Case Style Cat. No.	3½" Case Style Price	4½" Case Style Cat. No.	4½" Case Style Price
DC VOLTMETERS Self-shielding					
		Model 523		Model 524	
0-5		15038		15108	
0-10		15039		15109	
0-15	1000	15040		15110	
0-30	ohms	15042	$43.20	15112	$46.95
0-50	per volt	15044		15114	
0-100		15045		15111	
0-150		15046		15116	
DC AMMETERS Self-shielding					
0-1	.050	15031		15101	
0-3	.0166	15032		15102	
0-5	.010	15033		15103	
0-10	.005	15030	42.00	15100	45.45
0-15	.0033	15034		15104	
0-25	.0020	15035		15105	
0-50	.001	15036		15106	
DC MILLIAMMETERS Self-shielding					
0-1	43.0	15000		15070	
0-5	2.0	15001	40.35	15076	43.20
0-10	10.0	15002		15077	
0-50	2.0	15003		15078	
0-100	1.0	15010		15080	
0-200	0.5	15004	42.00	15079	45.45
0-300	0.33	15012		15081	
0-500	0.2	15013		15082	
VU METERS Self-shielding					
Scale		Model 543		Model 544	
A—Scale		15064	66.75	15134	73.05
A—Scale, Illumin.		15065	73.50	15135	79.20
B—Scale, Illumin.		15066	73.50	15136	79.20

*2 lamps, 28 V, 40 mA each

STOCK RANGES

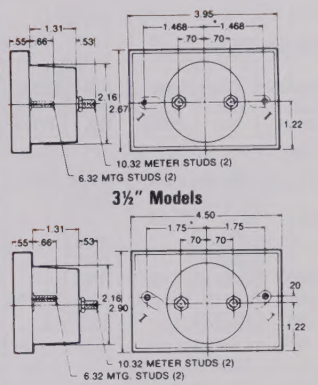
Range	Approx. Resist. (ohms)	3½" Case Style Cat. No.	3½" Case Style Price	4½" Case Style Cat. No.	4½" Case Style Price
DC MICROAMMETERS Self-shielding					
		Model 523		Model 524	
0-15	1960	15014	$73.80	15092	$80.85
0-25	2100	15015	63.30	15085	69.60
0-50	1800	15017	51.30	15087	55.05
0-100	1800	15019	46.95	15089	52.20
0-200	1100	15021	43.20	15091	46.95
0-500	90	15022	42.45	15093	46.20
25-0-25	1800	15023	51.75	15094	55.35
50-0-50	1800	15025	46.95	15095	52.50
100-0-100	1100	15027	43.65	15097	47.70
500-0-500	43	15024	42.00	15096	43.65
DC MILLIVOLTMETERS Self-shielding					
0-50	10.0	15048	42.00	15118	45.45
AC VOLTMETERS Iron-vane type					
		Model 553		Model 554	
0-150	25,000	15060		15130	
0-250	41,166	15061	42.45	15131	45.45
0-300	50,000	15062		15132	
AC AMMETERS Iron-vane type					
0-1	.213	15049		15121	
0-5	.008	15050		15120	40.20
0-10	.004	15052		15122	
0-15	.0025	15051	38.10	15123	
0-25	.002	15053		15125	45.45
0-50	.001	15054		15124	45.45
0-100	.008	15056‡		15127‡	40.20
0-150	.008	15057‡		15128‡	40.20

‡Requires external current transformer (see page 26)

PEAK PROGRAM INDICATORS Self-shielding**					
B-Scale	600Ω	15150	$49.95	15151	$51.30

**Meet BS4297:1968 requirements. Black dial, white pointer.

DIMENSIONS



3½" Models

4½" Models

MANUFACTURED IN U.S.A.

BOLD-VUE SERIES

SPECIFICATIONS: Scale length for 2½" models 2.207" (56.1 mm); for 3½" models, 3.047" (77.4 mm). All models: ±2% fs accuracy; wide tapered red lance pointer.

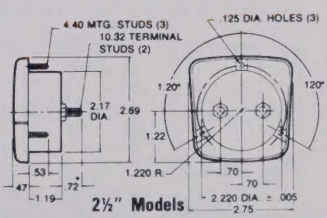
STOCK RANGES

Range	Approx. Resist. (ohms)	2½" Case Style Cat. No.	2½" Case Style Price	3½" Case Style Cat. No.	3½" Case Style Price
DC VOLTMETERS Self-shielding					
		Model 1222		Model 1223	
0-5		15465		15575	
0-10		15466		15577	
0-15		15467		15578	
0-25	1000	15470		—	
0-30	ohms	15475	$40.05	15581	$42.00
0-50	per volt	15480		15583	
0-100		15490		15585	
0-150		15495		15587	
0-300		15500		15590	
DC AMMETERS Self-shielding					
0-1	.050	15401		15510	
0-2	.025	—		15515	
0-5	.010	15405	40.05	15520	42.00
0-10	.005	15410		15522	
0-15	.0033	15411		15525	
0-25	.0020	15415	42.00	15530	42.00
0-50	.001	15417	42.00	15535	42.00
DC MILLIAMMETERS Self-shielding					
0-1	43.0	15420	39.60	15540	40.35
0-50	2.0	15428	40.85	15550	40.35
0-100	1.0	—		15552	
0-200	0.5	—		15555	42.00
0-300	0.33	—		15557	
0-500	0.2	15445	40.05	15558	

STOCK RANGES

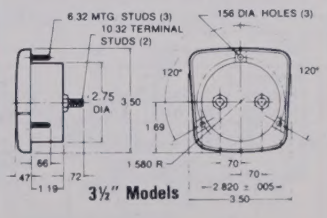
Range	Approx. Resist. (ohms)	2½" Case Style Cat. No.	2½" Case Style Price	3½" Case Style Cat. No.	3½" Case Style Price
DC MILLIVOLTMETER Self-shielding					
		Model 1222		Model 1223	
0-50	10.0	15505	$40.05	15593	$43.20
DC MICROAMMETERS Self-shielding					
0-50	1800	15450	50.25	15560	51.30
0-100	1800	15452	45.45	15562	46.95
0-200	1100	15455	41.40	15563	43.20
25-0-25	1800	—		15570	51.75
50-0-50	1800	15461	46.20	15571	46.95
100-0-100	1100	—		15572	43.65
500-0-500	43	—		15573	41.40
AC VOLTMETERS Iron-vane type					
		Model 1252		Model 1253	
0-150	25,000	15620		15660	
0-250	41,166	15625	39.90	15670	42.45
0-300	50,000	15630		15675	
AC AMMETERS Iron-vane type					
0-3	.028	15597	36.30	15636	54.00
0-5	.008	15598	36.30	15637	54.00
0-5/150%	.008	15599	36.30	15638	54.00
0-10	.004	15600	36.30	15640	54.00
0-15	.0025	15605	36.30	15642	54.00
0-25	.002	15610	37.35	15645	39.75
0-50	.001	15613	37.35	15648	39.75

DIMENSIONS



2½" Models

*AC Models 1252 & 1253 have stud length of .87"



3½" Models

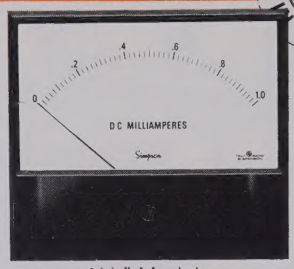
— Simpson Has the World's Largest Selection of Stock Panel Meters —

Simpson® Century Panel Meters

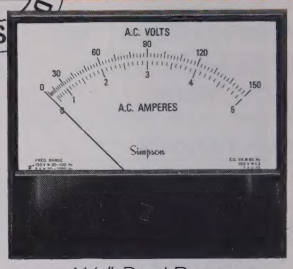
1½" Models

2½" Models

3½" Models



4½" Models



4½" Dual Range

CALIBRATION—All Century DC meters listed below have the Simpson self-shielded movement. (Calibration is not affected by stray magnetic field or magnetic mounting.) AC meters have either iron-vane type or rectifier type movements. All calibrated at 60 Hz. Iron-vane type ammeters and milliammeters have frequency range (for ±1% deviation from value at 60 Hz) of 25 to 800 Hz. Iron-vane voltmeters have range of 25 to 125 Hz. Calibration to 800 Hz available on special order. All rectifier types have 25 Hz to 10 kHz range.

STOCK RANGES

DC VOLTMETERS Self-shielding meter movement

Range	Approx. Resist. (ohms)	1½" Case Style Model 2121 Cat. No.	Price	2½" Case Style Model 2122 Cat. No.	Price	3½" Case Style Model 2123 Cat. No.	Price	4½" Case Style Model 2124 Cat. No.	Price
0-5		17840		17445		17525		17618	
0-8		—		—		—		17619	
0-10		17842		17446		17527		17620	
0-15		17843		17447		17528		17621	
0-25	1000	17844		17448		17529		17622	
0-30	ohms	17845	$39.30	17449	$42.00	17530	$43.20	17623	$46.95
0-50	per	17846		17450		17531		17624	
0-100	volt	17848		17451		17532		17625	
0-150		17849		17452		17533		17626	
0-200		—		—		17534		17627	
0-250		—		—		17535		—	
0-300		—		17455		17536		17629	
0-300	2000	17850	39.30	—		—		—	
0-500	ohms	17851*	48.60	17456	43.20	17537	45.45	17630	48.90
0-750	per	—		—		17538	45.45	17631	48.90
0-1000	volt	—		17458*	54.00	17539*	55.35	17632*	59.25

*External multipliers (Model 183) are furnished on 1½" DC meters 500 volts or higher; on 2½" DC meters, 750 volts or higher; and on 3½" and 4½" DC meters, 1000 volts or higher. All others have self-contained multipliers.

DC AMMETERS Self-shielding meter movement

Range	Approx. Resist. (ohms)	1½" Case Style Model 2121 Cat. No.	Price	2½" Case Style Model 2122 Cat. No.	Price	3½" Case Style Model 2123 Cat. No.	Price	4½" Case Style Model 2124 Cat. No.	Price
0-1	.050	17800		17400		17475		17565	
0-1.5	.003	—		17401		17476		—	
0-2	.025	17801		17402		17477		17567	
0-3	.0166	17802		17403		17478		17568	
0-5	.010	17803		17404		17479		17569	
0-10	.005	17805		17405		17480		17570	
0-15	.0033	17806†		17406		17481		17571	
0-25	.0020	17807†	39.30	17407	40.05	17482	42.00	17572	45.45
0-30	.0017	—		17408		17483		17573	
0-50	.001	17808†		17409		17484		17574	
0-100	10.0	—		17410†		17485†		17575†	
0-150	10.0	—		—		17486†		17576†	
0-200	10.0	—		17412†		17487†		17577†	
0-300	10.0	—		—		17488†		17578†	
0-500	10.0	—		—		17489†		17579†	
15-0-15	.0033	—		—		17490	43.95	—	
30-0-30	.0017	—		—		17491	43.95	—	

†1½" DC ammeters are self-contained through 10 amps. 15 amps and higher are supplied as 50 mV meters to be used with external shunts. 2½", 3½" and 4½" DC ammeters are self-contained through 50 amps. Higher range DC ammeters are 50 mV meters to be used with external shunts. See shunt listings on page 26.

DC MILLIVOLTMETERS Self-shielding meter movement

Range	Approx. Resist. (ohms)	2½" Case Style Model 2122 Cat. No.	Price	3½" Case Style Model 2123 Cat. No.	Price	4½" Case Style Model 2124 Cat. No.	Price
0-50	10.0	17472	$40.05	17540	$42.00	17636	$45.45
50-0-50	20.0	—		17541	42.00	17635	45.45

SPECIFICATIONS

Size	Type and Model Number DC	AC Iron-Vane	RF	Watt	AC Rectifier	DB	VU	Accuracy (% of Full Scale)	Scale Length	Pointer
1½"	2121	—	—	—	2141	—	2141	DC, RF AC Iron-Vane and Wattmeters, ±2% Compensated Wattmeters and AC Rectifier Meters ±3%	1.25" (31.7mm)	Knife Edge Black
	2122	—	2132	—	2142	2142	2142		2.07" (52.6 mm)	
2½"	—	2152	—	—	—	—	—		1.86" (47.3 mm)	
	2123	—	2133	—	2143	2143	2143		2.75"(69.8 mm)	
3½"	—	2153	—	2173	—	—	—		2.48"(63 mm)	
	2124	—	2134	—	2144	2144	2144		4.09"(103.9 mm)*	
4½"	—	2154	—	2174	—	—	—		3.70"(94.2 mm)	

*VU meter, 3.71 (94.2 mm)

DC MILLIAMMETERS Self-shielding meter movement

Range	Approx. Resist. (ohms)	1½" Case Style Model 2121 Cat. No.	Price	2½" Case Style Model 2122 Cat. No.	Price	3½" Case Style Model 2123 Cat. No.	Price	4½" Case Style Model 2124 Cat. No.	Price
0-1	43.0	17825		17430		17510		17600	
0-3	2.0	—		17431		17511		17601	
0-5	2.0(20‡)	17826	$37.35	17432	$39.60	17512	$40.35	17602	$43.20
0-10	10.0(2.2‡)	17827		17433		17513		17603	
0-15	6.6(2.2‡)	17828		17434		—		—	
0-20	5.0	—		—		17515		—	
0-25	4.0(6.0‡)	17829		17436		17516		17606	
0-50	2.0(3.0‡)	17830		17437		17517		17607	
0-100	1.0(1.5‡)	71832		17438		17518		17608	
0-150	.66(1.0‡)	17833		17439		17519		17609	
0-200	.50(75‡)	17834	39.30	17440	40.05	17520	42.00	17610	45.45
0-250	.40(.60‡)	17835		17441		17521		17611	
0-300	.33(.50‡)	17836		17442		17522		17612	
0-500	.20(.30‡)	17837		17443		17523		17613	
0-750	.13	—		—		17524		17614	
0-1000	.05	—		17444		—		17615	

DC MICROAMMETERS Self-shielding meter movement

Range	Approx. Resist. (ohms)	1½" Case Style Model 2121 Cat. No.	Price	2½" Case Style Model 2122 Cat. No.	Price	3½" Case Style Model 2123 Cat. No.	Price	4½" Case Style Model 2124 Cat. No.	Price
0-50	1800(5500‡)	17815	48.90	17418	50.25	17499	51.30	17589	55.05
0-100	1800	17816	43.65	17420	45.45	17501	46.95	17591	52.20
0-200	1100	17818	39.90	17422	41.40	17503	43.20	17593	46.95
0-500	90(190‡)	17819	39.30	17424	40.35	17505	43.20	17595	46.20
25-0-25	1800(5500‡)	17820	49.35	—		17506	51.75	17596	55.35
50-0-50	1800	17821	43.95	17425	46.20	17507	46.95	17597	52.50
100-0-100	1100	17822	40.05	17426	42.00	17508	43.65	17598	47.70
500-0-500	43	17823	38.10	17427	39.90	17509	41.40	17599	43.65

‡Resistances of Model 2121

TAUT-BAND DC MICROAMMETERS Self-shielding

Range	Approx. Resist. (ohms)	2½" Case Style Model 2122T Cat. No.	Price	3½" Case Style Model 2123T Cat. No.	Price	4½" Case Style Model 2124T Cat. No.	Price
0-5	5750	—		17495††	$94.50	17585††	$100.65
0-10	4900	17415	$79.65	17496	83.25	17586	90.00
0-15	1960	17416	73.05	17497	74.40	17587	80.85
0-25	1960	17417	69.15	17498	72.45	17588	78.45
0-50	960	17419	54.30	17500	55.35	17590	59.85
0-100	500	17421	49.65	17502	51.30	17592	56.55
0-200	234	17423	46.50	—		17594	53.55

††High flux annular taut-band movement

—Prices Are Suggested and Subject to Change Without Notice—

Range	Approx. Impedance (ohms) @ 60 Hz	1½" Case Style Cat. No.	1½" Case Style Price	2½" Case Style Cat. No.	2½" Case Style Price	3½" Case Style Cat. No.	3½" Case Style Price	4½" Case Style Cat. No.	4½" Case Style Price
AC VOLTMETERS Rectifier type. Self-shielding meter movement		Model 2141		Model 2142		Model 2143		Model 2144	
0-5		17855		17460		17542		17640	
0-10	2000	17856		—		17543		17641	
0-15	ohms		$53.55		$49.65	17544	$56.55	17642	$62.55
0-50	per	—		—		17545		17643	
0-150	volt	17860		17462		17546		17644	
0-300		17861		—		—		17645	
AC VOLTMETERS Iron-vane type				Model 2152		Model 2153		Model 2154	
0-5	33	—		—		17725		—	
0-10	133	—		17685		17726		17771	
0-15	300	—		17686	38.10	17727	39.90	17772	44.40
0-25	833	—		17687		17728		17773	
0-50	3,333	—		17688		17729		17774	
0-100	16,666	—		—		17730	41.40	17775	
0-150	25,000	—		17690		17731		17776	
0-250	41,166	—		17691	39.90	17732	42.45	17777	45.45
0-300	50,000	—		17692		17733		17778	
0-500††	83,333	—		—		17734	53.85	17779	57.30
RF AMMETERS Self-shielding meter movement				Model 2132		Model 2133		Model 2134	
0-1	.343	—		17905		—		17650	
0-2	.120	—		17906		17552		17652	
0-3	.08	—		17907	43.65	17554	47.70	—	54.30
0-5	.045	—		17908		17555		—	
0-10	.023	—		17909		17557		17657	
DECIBEL METERS Zero power level: 6 mW into 500 Ω line Self-shielding meter movement				Model 2142		Model 2143		Model 2144	
−10 to +6 dB	5000	—		17465	55.05	17549	58.65	17648	60.45

VU (Volume Level) METERS† Reference level: 1 mW into 600 Ω Self-shielding meter movement

Scale	Model 2141		Model 2142		Model 2143		Model 2144	
A—Scale	17865	59.25	17473	65.55	17560	66.75	17646	73.05
B—Scale	—		—		17561	66.75	17647	73.05
A—Scale, Illum.*	—		—		—		17662	79.20
B—Scale, Illum.*	—		—		—		17663	79.20

*12 V, 120 mA lamps

Range	Sensitivity (μA)	Approx. Resistance (ohms)	Model 2122-2½" Case Style Cat. No.	Model 2122-2½" Case Style Price	Model 2123-3½" Case Style Cat. No.	Model 2123-3½" Case Style Price
DC GALVANOMETERS Self-shielding						
50-0-50	500-0-500	43	17470	$39.60	17558	$41.40
50-0-50	75-0-75	1800	—		17559	46.20

†Simpson VU meters meet all the electrical and ballistic specifications established by Bell Laboratories and American National Standards Institute as required by broadcasting, communication and sound engineers. They are available with either type A or B scales. Type A scale stresses the level in VU for monitoring wire lines. Type B scale stresses percent use of transmitter output and is the standard for broadcast service. Impedance is 3900 ohms at "O" VU deflection.

Range	Approx. Impedance (ohms) @ 60 Hz	2½" Case Style Cat. No.	2½" Case Style Price	3½" Case Style Cat. No.	3½" Case Style Price	4½" Case Style Cat. No.	4½" Case Style Price
AC AMMETERS Iron-vane type movement		Model 2152		Model 2153		Model 2154	
0-1	.213	17665		17695		17740	
0-1.5	.105	17666		—		—	
0-2	.065	—		17697		17742	
0-3	.028	17667	$36.30	17698	$38.10	17743	$40.20
0-5	.008	17668		17699		17744	
0-10	.004	17669		17700		17745	
0-15	.0025	17670		17701		17746	
0-25	.002	17671		17702		17747	
0-30	.0015	17672	37.35	17703	39.60	17748	42.00
0-50	.001	17673		17704		17749	
0-75	.0002	—		17710		17755	45.45
0-100	.008	17674‡	36.30	17706‡		17751‡	
0-150	.008	—		17707‡	38.10	17752‡	40.20
0-200	.008	—		17708‡		17753‡	
0-300	.008	—		17709‡		17754‡	
AC DUAL RANGE Ammeter/voltmeter models							
0-150V and 0-5A	15030 and .021	—		17694	54.00	17739	57.45
AC MILLIAMMETERS Iron-vane type movement							
0-10	1,650	17680		—		17760	
0-50	80	17681		17716		17761	
0-100	17.2	17682	35.55	17717	38.10	17762	40.20
0-250	3.15	17683		17718		17763	
0-500	.9	17684		17719		17764	

WATTMETERS Dynamometer type. Single-phase accuracy ±2% F.S.

Range	Maximum Volts	Maximum Amps			Model 2173		Model 2174	
0-75	150	1.0	—		17881		17896	
0-150	150	2.0	—		17882	83.25	17897	102.75
0-300	150	4.0	—		17883		17898	
0-600	300	4.0	—		17884		17899	
0-750	150	10.0	—		17885	90.15	17900	109.20
0-1500	300	10.0	—		17886		17901	
0-3000	300	20.0	—		17887		17902	

COMPENSATED WATTMETERS Accuracy ±3% F.S.

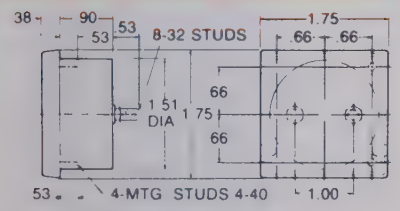
The standard wattmeter is unsuitable for use at low values of power because the power dissipated in the meter itself becomes an appreciable portion of the meter reading. This error is corrected in a COMPENSATED wattmeter.

0-10	300	0.175	—		17875		17890	
0-20	300	0.400	—		17876		17891	
0-20	500	0.175	—		17878	131.85	17893	137.40
0-30	300	0.650	—		17877		17892	
0-30	500	0.300	—		17879		17894	
0-50	500	0.500	—		17880		17895	

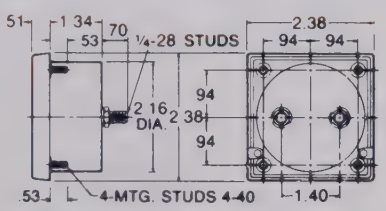
†† External multipliers, Model 183 (on page 26), are furnished on AC meters having a range of 500 volts or higher. All others have self-contained multipliers.

‡ 2½" AC ammeters are self-contained through 50 amps. 3½" and 4½" AC ammeters are self-contained through 75 amps. Higher range AC ammeters are 5 amp meters to be used with external current transformer. See page 26 for current transformer listings.

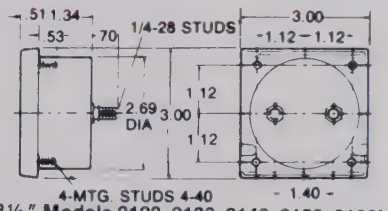
CENTURY SERIES DIMENSIONS



1½" Models 2121, 2141

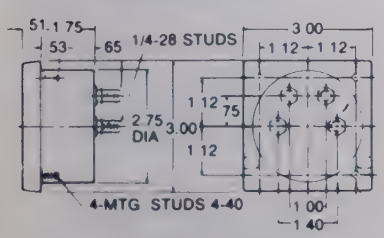


2½" Models 2122, 2132, 2142, 2152

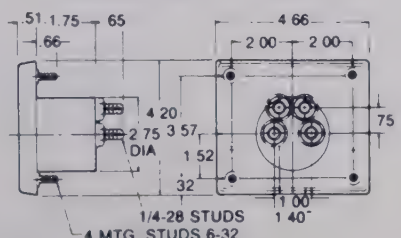


3½" Models 2123, 2133, 2143, 2153, 2123L*

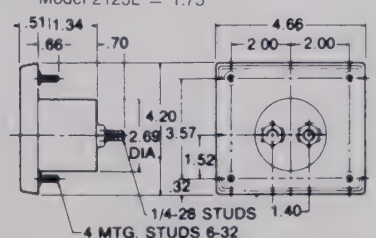
*Model 2123L = 1.75"



3½" Model 2173



4½" Model 2174



4½" Models 2124,2134,2144,2154

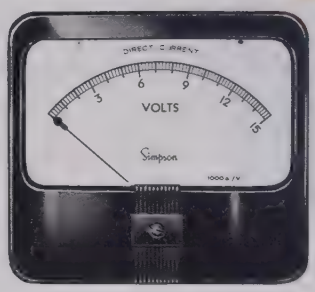
Simpson® Round and Rectangular Panel Meters

2½" Models 125, 125T, 135, 145, 155, 175

3½" Models 25, 25T, 35, 45, 55, 75

2½" Models 127, 127T, 137, 147, 157, 177

3½" Models 27, 27T, 37, 47, 57, 77



4½" Models 29, 29T 39, 49, 59, 79

2½", 3½", 4½" SPECIFICATIONS

Size	Type and Model Number: DC	Iron-Vane	RF	Watt	AC Rectifier	dB	VU	Accuracy (% of Full Scale)	Scale Length	Pointer
2½"	125,125T 127,127T	—	135,137	—	—	145,147	—	DC, RF, AC Iron-Vane and	1.8"(45.7 mm)	Spade, Black
	—	155,157	—	175,177	—	—	—	Wattmeters,	1.6"(41.1 mm)	
3½"	25,25T, 27,27T	—	35,37	—	45,47	45,57	45,47	±2% Compensated	2.5"(63.7 mm)	
	—	55,57	—	75,77	—	—	—	Wattmeters	2.3"(57.4 mm)	
4½"	29,29T	—	39	—	49	49	142	and AC Rectifier	3.8"(97 mm)	
	—	59	—	79	—	—	—	Meters ±3%	3.5"(89.0 mm)	

DC VOLTMETERS Self-shielding meter movement

Range	Approx. Resistance (ohms)	2½" Case Styles Cat. Nos. Models 125	127	Price	3½" Case Styles Cat. Nos. Models 25	27	Price	4½" Case Styles Cat. No. Model 29	Price
0-1.5		08850	09020		—	07290		07620	
0-3		—	09030		07070	07300		07630	
0-5		08870	09040		07080	07310		07640	
0-8		—	09050		—	—		07650	
0-10		08890	09060		07100	07330		07660	
0-15		08900	09080		07110	07350		07670	
0-25	1000	08910	09090	$42.00	07120	07360	$43.20	07680	$46.95
0-30	ohms	08920	09100		07130	07370		07690	
0-50	per volt	08930	09110		07140	07380		07700	
0-100		08940	09130		07150	07400		07710	
0-150		08950	09140		07160	07410		07720	
0-200		08960	09160		07170	07430		07730	
0-250		08970	09170		07180	07440		07740	
0-300		—	09180		07190	07450		07750	
0-500		—	09200	43.20	07200	07470	45.45	07760	48.90
0-750		—	—		07210	07490	45.45	07770	48.90
0-1000		—	—		07220	07495†	55.35	07780†	59.25
0-1500	2000	—	—		—	07520†	55.35	07790†	60.15
0-2000	ohms	—	09225†	53.85	07240	07530†	57.45	07800†	61.20
0-2500	per volt	—	—		—	07550†	58.05	07810†	62.25
0-3000		—	—		07260†	07560†	59.10	07820†	62.70
0-4000		—	—		—	—		07830†	63.30
0-5000		—	—		07280†	07600†	60.45	07840†	66.45

DC AMMETERS Self-shielding meter movement

Range	Approx. Resistance (ohms)	2½" Case Styles Cat. Nos. Models 125	127	Price	3½" Case Styles Cat. Nos. Models 25	27	Price	4½" Case Styles Cat. No. Model 29	Price
0-1	.050	01460	01680		00005	00230		00450	
0-1.5	.033	—	01690		—	00240		00460	
0-2	.025	—	01709		00030	00250		00470	
0-3	.0166	01490	01710		00040	00260		00480	
0-5	.010	01500	01720		00050	00270		00490	
0-10	.005	01510	01730		00060	00280		00500	
0-15	.0033	01520	01740		00070	00290		00512	
0-25	.0020	01530	01750		00080	00300		00520	
0-30	.0017	01540	01760	$40.05	00090	00310	$42.00	00530	$45.45
0-50	.001	01550	01770		00099	00320		00540	
0-75	10.0	01560	01780‡		00110‡	00330‡		00550‡	
0-100	10.0	01570‡	01790‡		00120‡	00340‡		00560‡	
0-150	10.0	01580‡	01800‡		00130‡	00350‡		00570‡	
0-200	10.0	01590‡	01810‡		00140‡	00360‡		00580‡	
0-250	10.0	—	—		00151‡	—		00590‡	
0-300	10.0	01610‡	—		00160‡	00380‡		00600‡	
0-500	10.0	01620‡	—		00170‡	00390‡		00610‡	
0-750	10.0	—	—		00177‡	00400‡		00620‡	
0-1000	10.0	—	—		00188‡	00410‡		00630‡	
15-0-15	.0033	—	—		00200	—		00640	
30-0-30	.0017	01660	01880	40.35	00210	00430	43.95	00650	46.35
50-0-50	.001	01670	01890		00220	00440		00660	

DC MILLIVOLTMETERS Self-shielding meter movement

Range	Approx. Resistance (ohms)	2½" Case Styles Cat. Nos. Models 125	127	Price	3½" Case Styles Cat. Nos. Models 25	27	Price	4½" Case Styles Cat. No. Model 29	Price
0-50	10	06970	06990	40.05	06910	06930	42.00	06950	45.45
0-100	20	—	—		—	06940	42.00	06960	45.45

DC MILLIAMMETERS Self-shielding meter movement

Range	Approx. Resistance (ohms)	2½" Case Styles Cat. Nos. Models 125	127	Price	3½" Case Styles Cat. Nos. Models 25	27	Price	4½" Case Styles Cat. No. Model 29	Price
0-1	43.0	05580	05760		04610	04790		05070	
0-1.5	43.0	—	05780		04620	04810		05080	
0-3	2.0	—	05790		—	04820		05090	
0-5	2.0	05610	05800	39.60	04640	04830	40.35	05100	43.20
0-10	10.0	05620	05810		04650	04840		05110	
0-15	6.6	05630	05830		04660	04860		05120	
0-20	5.0	—	—		—	04880		05130	
0-25	4.0	05650	05860		04680	04890		05140	
0-50	2.0	—	05880		04690	04910		05150	
0-75	1.3	05670	—		—	—		—	
0-100	1.0	05680	05910		04710	04940		05170	
0-150	.66	05690	05930		04720	04960		05180	
0-200	.5	05700	05940	40.05	04730	04980	42.00	05190	45.45
0-250	.4	05710	—		—	05000		05200	
0-300	.33	—	—		04750	05010		05210	
0-500	.2	05730	05990		04760	05030		05220	
0-750	.13	—	—		—	05050		05230	
0-1000	.05	—	06020		04780	05060		05240	

CALIBRATION

All DC meters listed above have the Simpson self-shielding movement. (Calibration is not affected by stray magnetic fields or magnetic mounting.)

AC meters have either iron-vane type or rectifier type movements. All calibrated at 60 Hz. Iron-vane type ammeters and milliammeters have frequency range (for ±1% deviation from value at 60 Hz) of 25 to 800 Hz. Iron-vane voltmeters have range of 25 to 125 Hz. Calibration to 800 Hz available on special order. All rectifier types have 25 Hz to 10 kHz range.

Wattmeters (page 14) have the Simpson dynamometer movement calibrated for either magnetic or non-magnetic panels and for a frequency range of 25-125 Hz. Standard wattmeters have ±2% accuracy, compensated wattmeters ±3% accuracy.*

†External multipliers, Model 183, are furnished on 2½" DC meters 750 volts or higher; and on 3½" and 4½" DC meters 1000 volts or higher. All others are self-contained

‡DC ammeters are self-contained for ranges up to and including 50 amperes. Higher range DC ammeters (50 mV) listed above are calibrated for 5 ft. leads and require external shunts. See page 26 for complete listings.

*The standard wattmeter is unsuitable for use at low values of power because the power dissipated in the meter itself becomes an appreciable portion of the meter reading. This error is corrected in a COMPENSATED wattmeter.

—Prices Are Suggested and Subject to Change Without Notice—

DC MICROAMMETERS Self-shielding meter movement

Range	Approx. Resistance (ohms)	2½" Case Styles Models 125 Cat. No.	127 Cat. No.	Price	3½" Case Styles Models 25 Cat. No.	27 Cat. No.	Price	4½" Case Styles Model 29 Cat. No.	Price
0-50	1800	04210	04260	$50.25	03760	03860	$51.30	03960	$55.05
0-100	1800	04220	04270	45.45	03770	03870	46.95	03970	52.20
0-200	1100	04230	04280	41.40	03780	03880	43.20	03980	46.95
0-500	90	—	—		03790	03890	42.45	03990	46.20
25-0-25	1800	—	04243	52.20	—	03900	51.75	04000	55.35
50-0-50	1800	04194	04245	46.20	03810	03910	46.95	04010	52.50
100-0-100	1100	04196	04247	42.00	03820	03920	43.65	04020	47.70
500-0-500	43	—	—		03830	03930	39.60	04030	43.65

TAUT-BAND DC MICROAMMETERS Self-shielding

Range		Models 125T	127T		25T	27T		Model 29T	
0-5	5750	—	—		03738	03838	94.50	03938	101.10
0-10	4900	04197	04246	79.65	—	03839	83.25	03939	90.00
0-15	1960	—	04248	73.05	03741	03841	74.40	03941	80.85
0-25	1960	04201	04251	69.15	03751	03851	72.45	03951	78.45
0-50	960	—	04261	54.30	03761	03861	55.35	03961	59.85
0-100	500	—	—		03771	03871	51.30	03971	56.55

AC VOLTMETERS Iron-vane type meter movement

Range	Approx. Impedance (ohms) @ 60 Hz	2½" Case Styles Models 155 Cat. No.	157 Cat. No.	Price	3½" Case Styles Models 55 Cat. No.	57 Cat. No.	Price	4½" Case Styles Model 59 Cat. No.	Price
0-1.5	3	—	—		—	—		08710	
0-3	12	—	—		—	08540	39.90	08720	
0-5	33	—	09390		08410	08550	40.95	08730	
0-10	133	—	09400	38.10	08420	08566		08740	44.40
0-15	300	—	09420		08430	08580	39.90	08750	
0-25	833	—	09440		08440	08599		08760	
0-50	3,333	09290	09450		08450	08610		08770	
0-100	16,166	—	09460	39.30	08460	08620	41.40	08780	45.45
0-150	25,000	09310	09470		08470	08630		08790	
0-250	41,166	09320	09490	39.90	08480	08650	42.45	08800	46.35
0-300	50,000	09330	09500		08490	08660		08810	45.45
0-500	83,333	09340‡	09520‡	50.25	08500‡	08680‡	53.85	08820‡	57.30
0-750	125,000	—	—		08510‡	08690‡	53.85	08830‡	62.25
0-1000	166,666	—	—		—	08700‡	62.25	08840‡	64.05

AC AMMETERS Iron-vane type movement

Range	Approx. Impedance (ohms) @ 60 Hz	2½" Case Styles Models 155 Cat. No.	157 Cat. No.	Price	3½" Case Styles Models 55 Cat. No.	57 Cat. No.	Price	4½" Case Styles Model 59 Cat. No.	Price
0-1	.213	02100	02270		00950	01120		01290	
0-1.5	.105	—	—		00960	01130		01302	
0-2	.065	02120	02290		00970	01140		01310	
0-3	.028	02130	02300	$36.30	00980	01145	$38.10	01320	$40.20
0-5	.008	02140	02310		00990	01160		01330	
0-10	.004	02150	02320		01001	01170		01340	
0-15	.0025	02160	02330		01010	01180		01350	
0-25	.002	02170	02340		01020	01190		01360	
0-30	.0015	02180	02350	37.30	01030	01200	39.60	01370	42.00
0-50	.001	02190	02360		01040	01210		01380	
0-75	.0002	—	—		03432	03434	42.25	03436	45.45
0-75	.008	02200†	02370†		—	—		—	
0-100	.008	02210†	02380†		01060†	01230†		01400†	
0-150	.008	02220†	02390†	36.30	01070†	01240†		01410†	
0-200	.008	—	—		01080†	01250†	38.10	01420†	40.20
0-250	.008	02240	02410†		01090†	01260†		01430†	
0-300	.008	—	02420†		01100†	01270†		01440†	
0-500	.008	02260†	02422†		01110†	01280†		01450†	

AC MILLIAMMETERS Iron-vane type meter movement

Range		Models 155	157		55	57		Model 59	
0-10	1650.0	—	—		—	05440		05510	
0-15	887.0	—	—		05380	05499		—	
0-25	270.0	—	—		—	05460		05530	
0-50	80.0	—	06130	36.30	05400	05470	38.10	05540	40.20
0-100	17.2	—	06140		05410	05480		05550	
0-250	3.1	06080	06150		05420	05490		05560	
0-500	.9	06090	06152		05430	05500		05570	

DC GALVANOMETERS

Range	Sens. μA	Res. Ω	Models 125	127	Price	Models 25	27	Price	Model 29	Price
50-0-50	500-0-500	43	03670	03690	$39.60	03630	03650	$41.40	03654	$43.65
50-0-50	75-0-75	1800	—	03680	42.45	—	03640	46.20	03652	50.25

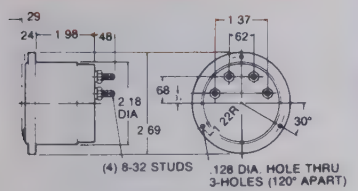
‡External multipliers, Model 183 (featured on page 26), are furnished on AC meters having a range of 500 volts or higher. All others are self-contained

†These meters are 5 amp meters with scales as indicated and require external current transformers. See listings on page 26.

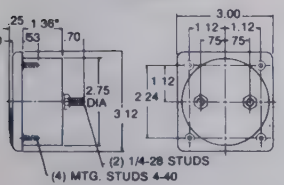
CONTINUED ON FOLLOWING PAGE

Round and Rectangular Meters As Listed on Pages 12, 13, 14

DIMENSIONS in Inches

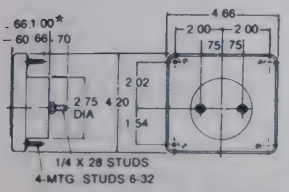


2½" Model 175



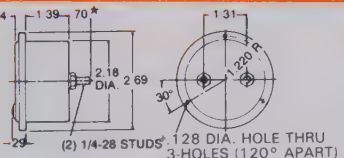
3½" Models 27 27T, 37, 47, 57

*Model 57 Barrel Length 1.45



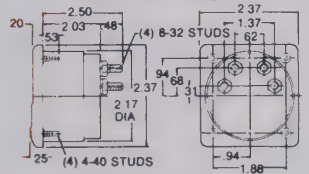
4½" Models 29, 29T, 39, 49, 59

*Model 59 Barrel Length 1.09

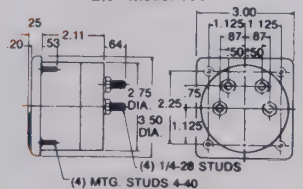


2½" Models 125, 135, 145, 155

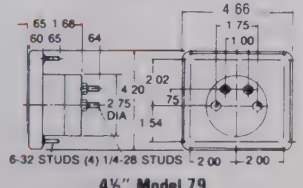
*Model 135 Stud Length .63



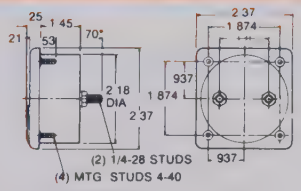
2½" Model 177



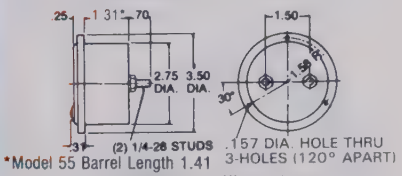
3½" Model 77



4½" Model 79

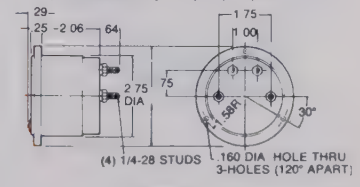


2½" Models 127, 137, 147, 157

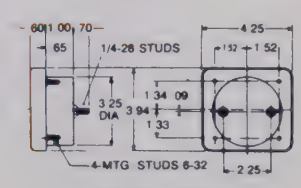


*Model 55 Barrel Length 1.41

3½" Models 25, 25T, 35, 45, 55



3½" Model 75



4½" Model 142

Round and Rectangular Panel Meters (continued)

Range	Approx. Impedance (ohms) @ 60 Hz	2½" Case Styles Cat. Nos.	Price	3½" Case Styles Cat. Nos.	Price	4½" Case Styles Cat. No.	Price
AC VOLTMETERS Rectifier type, self-shielding meter movement							
	Models:			45	47		49
0-1				—	08120		08300
0-3				—	08130		08310
0-5				—	—		08320
0-10	2000			—	—		08330
0-15	ohms			—	—	$56.55	08340 $62.55
0-50	per volt			—	—		08350
0-100				—	08180		08360
0-150				08010	08190		08370
0-300				—	—		08371
AC MILLIAMMETERS Rectifier type, self-shielding							
0-1	600			06820	06850		06880
0-2	400			—	06860	54.30	— 59.25
0-5	200			06840	06870		06900
AC MICROAMMETERS Rectifier type, self-shielding							
0-100	3400			04080	04120	62.55	04160 66.60
0-200	2400			—	—		04170 60.45
0-300	1800			—	04140	54.30	04180 59.25
0-500	1200			—	04150	54.00	04190 58.05
RF AMMETERS Self-shielding							
		Models 135	137		**Models** 35	37		**Model** 39
0-1	.343	01901	01980		00670	00750		00870
0-1.5	.200	01910	02000		⊥	00770		00880
0-2	.120	—	02010		—	00780		00890
0-2.5	.10	01930	—		—	00800		00900
0-3	.08	01940	02040	$43.65	00710	00810	47.70	00910 54.30
0-5	.045	01950	02060		00720	00830		00920
0-8	.031	—	02080		—	00850		00930
0-10	.023	—	02090		00736	00860		00940

*The standard wattmeter is unsuitable for use at low values of power because the power dissipated in the meter itself becomes an appreciable portion of the meter reading. This error is corrected in a COMPENSATED wattmeter.

Range	Approx. Impedance (ohms) @ 60 Hz	2½" Case Styles Cat. Nos.	Price	3½" Case Styles Cat. Nos.	Price	4½" Case Styles Cat. No.	Price
RF MILLIAMMETERS Self-shielding meter movement							
	Models:			35	37		39
0-115*	5.5			—	05290	$85.35	05330 $89.55
0-150	4.5			05260	05300		05340
0-250	3.5			05270	05310	56.40	05350 63.30
0-500	.63			05280	05320		05360

*0-100 uniformly divided scale

WATTMETERS Dynamometer type, single phase. Accuracy: ±2%

Range	Maximum Volts	Amps	Models 175	177		Models 75	77		Model 79	
0-75	150	1.0	—	10860		—	10650		10720	
0-150	150	2.0	—	—	$79.20	—	—	83.25	10730	102.75
0-300	150	4.0	—	—		10600	—		10740	
0-600	300	4.0	—	—		—	10680		10750	
0-750	150	10.0	—	10900		—	10690		10760	
0-1500	300	10.0	—	10910	86.55	—	10700	90.15	10770	109.20
0-3000	300	20.0	—	10920		—	10710		10780	

COMPENSATED WATTMETER* Single phase. Accuracy: ±3%

0-20	300	.400	—	—		—	—		10714	137.40

dB METERS Self-shielding. Zero power level: 6 mW into 500 Ω line

Range	Approx. Ω	Model 47	Price	Model 49	Price
−10 to +6 dB	5000 ohms	03450	$56.55	03460	$61.05

VU (Volume Level) METERS† Self-shielding
Reference level: 1 mW into 600 Ω line

Scale	Model 47		Model 142	
A—Scale, Not Illuminated	10450	66.75	10460	73.05
B—Scale, Not Illuminated	—		10530	73.05
A—Scale, Illuminated‡	—		10470	79.20
B—Scale, Illuminated‡	—		10540	79.20

†Simpson VU meters meet all the electrical and ballistic specifications established by Bell Laboratories and American National Standards Institute as required by broadcasting, communication and sound engineers. They are available with either type A or B scales. Type A scale stresses the level in VU for monitoring wire lines. Type B scale stresses per cent use of transmitter output and is the standard for broadcast service. Impedance is 3900 Ω at "O" VU deflection.
‡2 bulbs, 6 V 150 mA

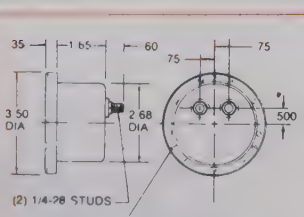
MANUFACTURED IN U.S.A.

250° Long Scale

Designed for applications that require high-accuracy readings, Simpson 250° panel meters provide more than double the scale length of the standard 90° or 100° movements. They are self-shielded, permanent magnet, moving coil instruments with non-magnetic pivots and spring-backed jewels. Phenolic cases with glass windows. External front access zero adjust.

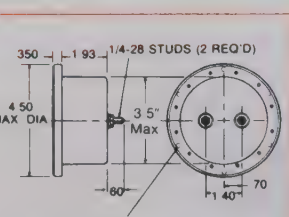
3½", 4½" Models 2523, 2524, 2543, 2544 Round Style (Sealed cases)

3½" Models 2123L, 2143L. Same dimension as 3½" Century Series shown on page 11



155 DIA. THRU HOLE — 3 HOLES 120° APART ON 3 160 DIA. B.C

3½" Models 2523, 2543, 2583



155 DIA. THRU HOLE — 6 HOLES 60° APART ON 4.25 DIA. B.C.

4½" Models 2524, 2544

SPECIFICATIONS

Size	Type and Model Number DC	AC Rectifier	Scale Length	Accuracy	Pointer
3½"	2523, 2123L	2543, 2143L	4.77" (121 mm)	DC: ±2% F.S.	Red,
4½"	2524	2544	6.54" (166 mm)	AC: ±3% F.S.	knife edge

RANGES

Range	250° Meters Resistance Approx.	2523 Cat. No.	Price	3½" Models 2123L Cat. No.	Price	4½" Models 2524 Cat. No.	Price
DC AMMETERS							
0-10	.005 Ω	17976	$87.45	—		17986	$93.00
DC MILLIVOLTMETERS							
0-50	10 Ω	17977	87.60	17914	$70.50	17987	93.30
DC MILLIAMMETERS							
0-1	135.0 Ω	17973	83.25	17913	68.25	17983	88.80
0-10	10.0 Ω	17974	83.25	—		17984	88.80
0-500	0.2 Ω	17975	87.45	—		17985	93.00
1-0-1	50.0 Ω	17996	83.40	—		17997	88.65
DC MICROAMMETERS							
0-50	8000 Ω	17970	101.25	17910	82.50	17980	109.80
0-100	4200 Ω	17971	97.80	17911	75.90	17981	103.95
0-500	340 Ω	17972	88.65	17912	70.50	17982	94.20

AC VOLTMETERS Rectifier type

Range	Impedance Approx.	2543 Cat. No.	Price	2143L Cat. No.	Price	2544 Cat. No.	Price
0-10		17990		—		17995	114.75
0-30	2000	—		17915		—	
0-150	Ω/volt	17978	109.20	17916	88.80	17988	114.75
0-300		17979		17917		17989	115.95

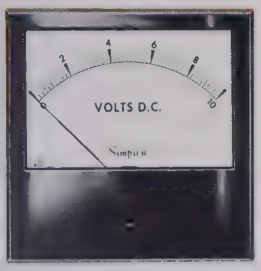
The 0-10 V AC rectifier type voltmeters above may be used with Current Transformer Model 186 to provide 17 common AC ammeter ranges from 0-50 mA to 0-50 A. (See page 21.)

AC AMMETERS

0-5	0.5 VA	—		17918	88.80	
0-150% load*	Maximum **	—		17919	88.80	

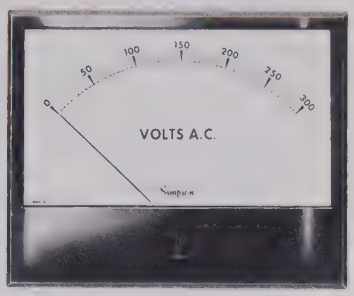
*0-5 amp movement
**Internal transformer burden

Simpson® Metal Cased "Rugged Seal" Panel Meters



3½" Models 3323, 3343

4½" Models 3324, 3344



4" x 6" Models 3326, 3346

This line of metal-cased panel meters is ideal for use in field test equipment or wherever rigorous environmental conditions are encountered. They are completely sealed, commercially ruggedized, glass window, metal cased and shielded. Not affected by steel panel mounting.

MANUFACTURED IN U.S.A.

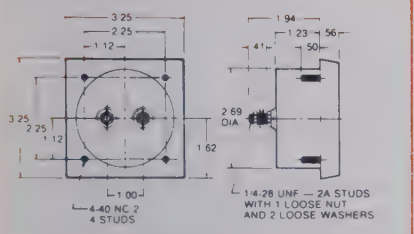
SPECIFICATIONS

Size	Type and Model Number DC	AC Rectifier	Accuracy (% of full scale)	Scale Length	Pointer
3½"	3323	3343	DC Meters: ±2%	2.74" (70 mm)	Knife-edge, Black
4½"	3324	3344	AC Rectifier	4.05" (103 mm)	
4" x 6"	3326	3346	Meters: ±3%	4.94" (125 mm)	

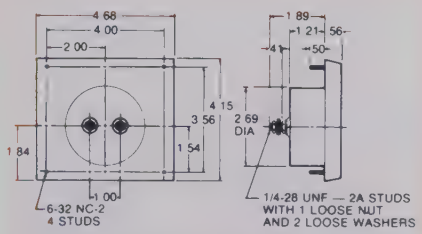
Range	Approx. Resistance (ohms)	3½" Case Style Cat. No.	Price	4½" Case Style Cat. No.	Price	4" x 6" Case Style Cat. No.	Price
DC VOLTMETERS Self-shielding meter movement							
		Model 3323		Model 3324		Model 3326	
0-1.5		16000		—		—	
0-10		16005		—		—	
0-15	1000	16010		—		—	
0-25	ohms	16015	$48.45	—		—	
0-50	per	16020		—		—	
0-100	volt	16025		—		—	
0-500		16030		—		—	
DC AMMETERS Self-shielding meter movement							
0-5	Internal Shunt	16035	49.50	—		—	
0-10	75 mV max.	16040	49.50	—		—	
DC MILLIVOLTMETERS Self-shielding meter movement							
0-50	10	16062	48.60	16157	$53.40	16252	$58.50
DC MILLIAMMETERS Self-shielding meter movement							
0-1	80 Ω	16045	46.95	16140	50.70	16235	55.95

Range	Approx. Resistance (ohms)	3½" Case Style Cat. No.	Price	4½" Case Style Cat. No.	Price	4" x 6" Case Style Cat. No.	Price
DC MICROAMMETERS Self-shielding meter movement							
		Model 3323		Model 3324		Model 3326	
0-50	3000	16055	$62.25	16150	$66.90	16245	$72.30
0-100	1450	16060	56.25	16155	61.05	16250	67.50
AC VOLTMETERS Rectifier type, self-shielding meter movement							
		Model 3343		Model 3344		Model 3346	
0-150	1000 ohms	16065	58.20	16160	61.35	—	—
0-300	per volt	16070	58.20	16165	61.35	16260	67.50
AC AMMETERS Rectifier type, shielded case not affected by magnetic mounting							
0-5	0.5 VA maximum*	16080	72.15	16175	75.00	16270	81.15
AC MILLIAMMETERS Rectifier type, self-shielding meter movement							
0-1	600	16085	57.75	16180	61.05	—	
AC MICROAMMETERS Rectifier type, self-shielding meter movement							
0-100	4000	—		16185	63.60	—	

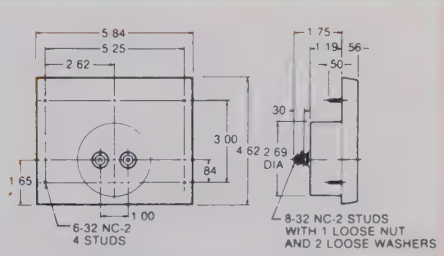
*Internal transformer burden



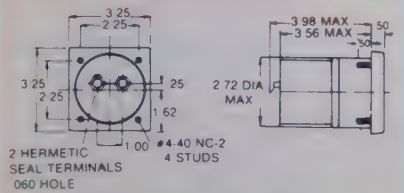
3½" Models 3323, 3343



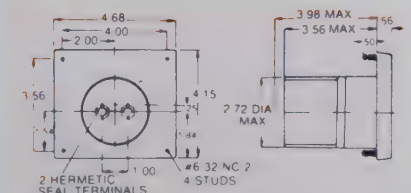
4½" Models 3324, 3344



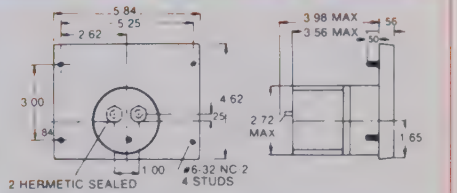
4" x 6" Models 3326, 3346



3½" Models 3383 - Page 16



4½" Model 3384 - Page 16



4" x 6" Model 3386 - Page 16

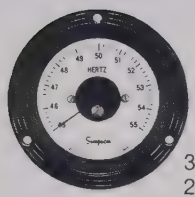
Simpson® Segmental Scale Panel Meters

Average Sensing and Frequency Meters

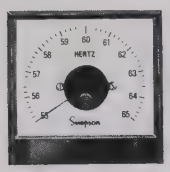
Segmental voltmeters and frequency meters make it possible to measure very small changes in input condition. The significant portion of the overall voltage or frequency range is expanded to occupy the full scale length. Thus, only the important segment of the range appears.

AC segmental voltmeters are average sensing units. In addition to the standard expansions and accuracies shown, special segmental voltmeters can be built on special order. Write to Simpson for a quotation.

MANUFACTURED IN U.S.A.



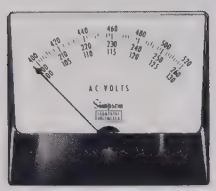
3½" Models
2543, 2583



3½" Models
2143L, 2183L

3½" Models
2143, 2183,
3383

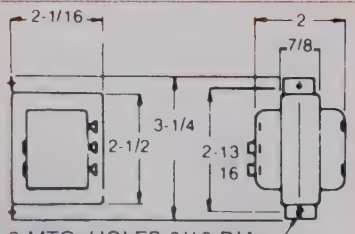
4½" Models
2144, 2184,
3384



4½" Model 2144
4½" Model 1349

DIMENSIONS

Model	See Page	Model	See Page
2543	14	3384	15
2583	14	3386	15
2143L	11 (2143)*	1347	7
2183L	11 (2173)*	2143	11
2183	11 (2123)	1349	7
2184	11 (2124)	2144	11
3383	15		



2 MTG. HOLES 3/16 DIA.
External Potential Transformer
4½" Models 1349, 2144

*Only 2 electrical terminals on horiz. centerline

SPECIFICATIONS

	Wide-Vue and Century		Round and Rectangular
	Average Sensing AC Segmental Voltmeters		
	Single Range	Multi-Range	Frequency Meters
Range	100-130 AC volts	100-130 200-260 AC 400-520 volts	45-55 55-65 Hz 380-420
Accuracy (% of Center Scale Value)	±.5%	100-130 ±.5% 200-250 ±.75% 400-520 ±.75%	45-55 Hz ±0.5% 55-65 Hz ±0.5% 380-420 Hz ±0.3%
Frequency Range	20-2000 Hz	50-1000 Hz	—
Center Scale Value	115 volts	115/230/460 volts	50/60/400 Hz
Sensitivity or Power Consumption	.6 to 1.3 VA (Sensitivity decreases as input voltage increases)		1.6 VA
Max. Input Voltage (10 Seconds)	150 volts rms	150/300/600 volts rms	150 V rms 110/120 V normal**
Square Wave Waveform Influence	11%		—
Triangular Wave	5%		
Voltage Influence 108-132 volts	—	—	45-55 Hz ±0.2% 55-65 Hz ±0.2% 380-420 Hz ±0.12%
Movement Type	All self-shielding		
Pointer	All Black knife edge except Wide-Vue which is spade		

STOCK RANGES

Range	Center Scale Value	Accuracy‡	3½" Cat. No.	3½" Price	4½" Cat. No.	4½" Price
ROUND—250° Long Scale Meters						
AC VOLTMETERS—Average Sensing			**Model 2543**			
100-130	115 V	0.5%	17991	**$113.25**	—	
FREQUENCY METERS			**Model 2583**			
45-55 Hz	50 Hz	0.5%	17992		—	
55-65 Hz	60 Hz	0.5%	17993	**115.20**	—	
380-420 Hz	400 Hz	0.3%	17994		—	
RECTANGULAR—250° Long Scale Meters						
AC VOLTMETER—Average Sensing			**Model 2143L**			
100-130	115 V	0.5%	17926	**113.25**		
FREQUENCY METERS			**Model 2183L**			
45-55 Hz	50 Hz	0.5%	17007		—	
55-65 Hz	60 Hz	0.5%	17008	**116.10**	—	
380-420 Hz	400 Hz	0.3%	17009		—	
RECTANGULAR—Standard Scale Meters						
FREQUENCY METERS			**Model 2183**		**Model 2184**	
45-55 Hz	50 Hz	0.5%	17920		17923	
55-65 Hz	60 Hz	0.5%	17921	**105.30**	17924	**$108.45**
380-420 Hz	400 Hz	0.3%	17922		17925	

WIDE-VUE AND CENTURY STYLE

Range	Center Scale Value	Accuracy‡	3½" Cat. No.	3½" Price	3½" Cat. No.	3½" Price	4½" Cat. No.	4½" Price	4½" Cat. No.	4½" Price
AC VOLTMETERS—Average Sensing			**Model 1347**		**Model 2143**		**Model 1349**		**Model 2144**	
100-130	115 V	0.5%	10152	**$121.80**	17548	**$121.80**	10155	**$122.40**	17638	**$122.40**
TRIPLE RANGE AC VOLTMETERS										
100-130	115 V	0.5%	—		—		10157†	**150.90**	17639†	**150.90**
200-260	230 V	0.75%†								
400-520	460 V	0.75%								

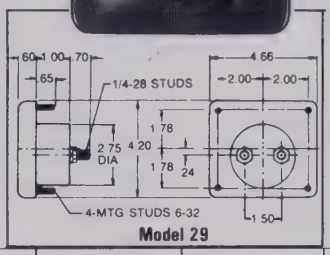
‡Accuracy shown in percent of center scale values
†Supplied with external potential transformer. See dimensions at left.
For 240 V ±10% input, order Multiplier (p. 26) Cat. No. 08551 . . . **$14.25

Simpson® Pyrometers

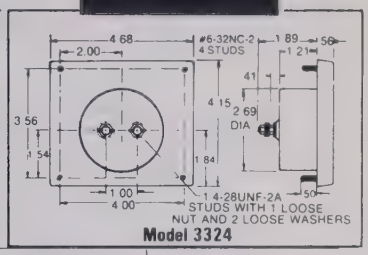
MANUFACTURED IN U.S.A.

Available in a variety of styles and ranges, all models are manufactured with ambient (bi-metal) cold-junction and circuit copper compensation. Accuracy: 2% (Model 3326, 1%). Each pyrometer is furnished with an external, adjustable series resistor to permit use of lower resistance thermocouples in the field. Thermocouples are not included; see page 26 for available Iron/Constantan (I/C) and Chrome/Alumel (C/A) types.

Simpson pyrometers are available in the following models:
Model 29, standard phenolic (see photo and dimensions at right).
Model 2123, 3½" Century Series case style (see photo and dimensions, page 11). °C above, °F below.
Model 2124, 4½" Century Series case style (see photo and dimensions, page 11). °C above, °F below.
Model 3324, 4½" Rugged steel, metal-cased for extreme conditions (photo and dimensions at right).
Model 3326, 4" x 6" case style (see photo and dimensions, page 15). Has mirror scale; °C above, °F below.



Model 29



Model 3324

Temperature Range °F	Temperature Range °C	Thermocouple Type Required†	Max. External Resist. (Ω)	Approx. Sensitivity (mA)	Model 29 Cat. No.	Model 29 Price	Model 2123* Cat. No.	Model 2123* Price	Model 2124* Cat. No.	Model 2124* Price	Model 3324 Cat. No.	Model 3324 Price	**Model 3326* Cat. No.	**Model 3326* Price
−150 to +250*	−100 to +120*	I/C	10	.40	21200	$65.69	21365		21373		21201		21381	
0 to +300*	− 20 to +150*	I/C	10	.40	21202		21366		21374		21203		21382	
0 to +500*	−20 to +260*	I/C	10	.35	21204	75.90	21367	$73.65	21375	$75.90	21205	$106.50	21383	$108.75
0 to +750*	−20 to +400*	I/C	10	.30	21206		—		—		21207		—	
0 to +800	−20 to +425	I/C	10	.30	—		21368		21376		—		21384	
0 to +1000	−20 to +540	I/C	10	.28	21208		21369		21377		21212		21385	
0 to +1500	−20 to +820	C/A	10	.42	21209		21370		21378		21213		21386	
0 to +2000	−20 to +1100	C/A	10	.43	21210	70.80	21371	67.95	21379	70.80	21214	97.95	21387	103.50
0 to +2500	−20 to +1380	C/A	10	.40	21211		21372		21380		21215		21388	

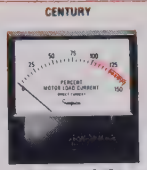
*Taut-Band. **1% Accuracy. †Thermocouple not supplied with pyrometer. I/C and C/A types are available from stock as accessory items (see page 26).

Simpson® Percent Motor Load Panel Meters

Provide visual monitoring of the load conditions of AC or DC motors while they are running. Depending on the application, such monitoring can help prevent overloading and motor burnout, establish and maintain optimum operating load conditions, or indicate the need for tool sharpening or replacement.

Meter scales show percent load from 0 to 150%; scale is green 0-100%, yellow 100-125%, red 125-150%. Accuracy: ±2% fs AC load meters can be used with all AC motors of any horsepower, voltage, commercial frequency or phase.

1327 1329
1357 1359



2123 2124
2153 2154

1222 1223
1252 1253

SCALE LENGTH

Style ► Size	WIDE-VUE	CENTURY	BOLD-VUE
2½"	—	—	2.21" (56.1 mm)
3½"	3.14" (79.7 mm)	2.75" (69.8 mm)	3.05" (77.4 mm)
4½"	3.93" (100.0 mm)	4.09" (103.9 mm)	—

SPECIFICATIONS AND STOCK RANGES

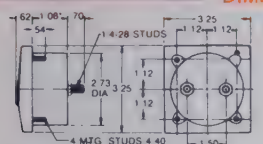
Type	Rating	2½" Model No.	2½" Cat. No.	2½" Price	3½" Model No.	3½" Cat. No.	3½" Price	4½" Model No.	4½" Cat. No.	4½" Price
DC (Note 1)	30 mV	1222	15506		1223	15594		—	—	—
		—	—		1327	07028		1329	07029	
		—	—	$44.40	2123	17564	$46.20	2124	17637	$52.50
AC (Note 2)	5 amps	1252	15599		1253	15638		—	—	
		—	—		1357	03171		1359	03301	
		—	—		2153	17711		2154	17756	

Note 1: DC load meters require an external shunt and potentiometer (not supplied). Use 8 to 10 Ω, 2 watt wire-wound potentiometer. The appropriate shunt should be selected from page 26 and ordered separately. To select the proper shunt, first obtain the full-load current rating of your motor from the name plate, manufacturer's specifications of N.E.C. listing. Multiply that rating by 1.25 and select and order the shunt with an "amps" rating as large or slightly larger than the calculated value. Installation and calibration instructions are included with the meter.

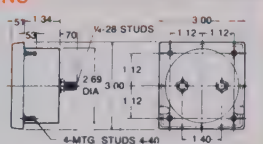
Note 2: AC load meters must be used with external donut transformers listed on page 26. Complete instructions for proper selection are included with each AC load meter.

Advance assistance in selecting the appropriate transformer and determining the correct primary/secondary turns ratio can be obtained from your local Simpson representative or by contacting the Simpson Distributor Center.

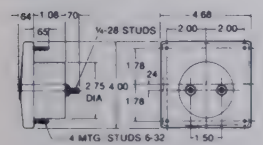
DIMENSIONS



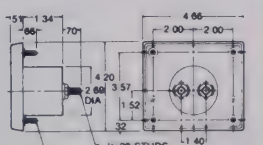
3½" Models 1327 (DC), 1357 (AC)



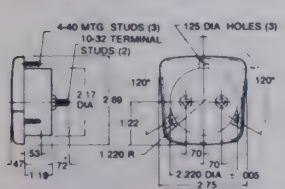
3½" Models 2123 (DC), 2153 (AC)



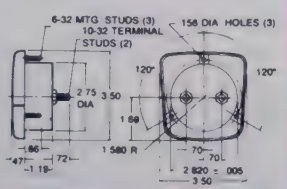
4½" Models 1329 (DC), 1359 (AC)



4½" Models 2124 (DC), 2154 (AC)



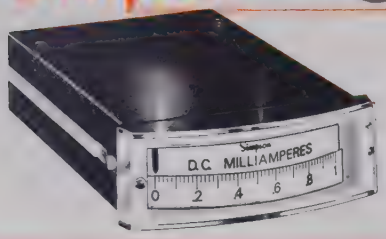
2½" Models 1222 (DC), 1252 (AC)



3½" Models 1223 (DC), 1253 (AC)

Simpson Edgewise Panel Meters

MANUFACTURED IN U.S.A.

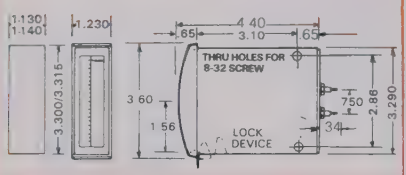


3½" Edgewise Panel Meters

SPECIFICATIONS

- Self-shielding 1-5/16" core magnet movement.
- Accuracy at ±2% of full scale ±1% available on special order.
- Rectifier type AC units are available up to 5 amps, and segmental voltmeters 100-130 V AC also available.
- Scale length equal to 2.6".
- Zero adjust available from the front (screw on right side).
- Horizontal mounting . . . vertical on special order.
- Illumination available.
- Highest self-contained range is 10 amps DC, 5 amps AC and 500 volts AC and DC.

DIMENSIONS

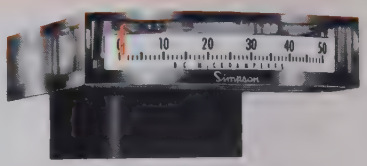


STOCK RANGES

DC MODEL 3623	Approx. Ω	Cat. No.	Price
0-25 μA DC*	2,730	16862	$75.15
0-50 μA DC*	1,010	16863	70.95
0-100 μA DC*	400	16864	67.20
0-200 μA DC	400	16865	63.30
0-500 μA DC	166	16866	61.35
25-0-25 μA DC	1,010	16867	71.40
0-1 mA DC	62	16868	59.70
4-20 mA DC	1	16869	65.55
0-50 mV DC	10	16870	61.50
0-25 V DC	1000 Ω/V	16873	
0-50 V DC	1000 Ω/V	16874	
0-10 V DC	1000 Ω/V	16880	63.60
0-15 V DC	1000 Ω/V	16881	
AC MODEL 3643			
0-5A, Rect.	**	16871	84.30
100-130 V AC, Seg.	500 Ω/V	16879	153.00

*Taut-band movement
**Internal transformer burden: 0.5 VA

1½" and 2½" Edgewise Barrel Type Panel Meters



When panel designs call for making every square inch count, or when weight-saving is important, Simpson edgewise meters solve these many design problems. New Model 1552 viscous damped iron-vane meters offer AC measurements in an edgewise meter at a low price. Supplied with complete hardware, bezel and two nuts. Horizontal mounting; vertical on special order.

STOCK RANGES

Range	Approx. Resistance (ohms)	1½" Case Style Cat. No.	1½" Case Style Price	2½" Case Style Cat. No.	2½" Case Style Price
DC VOLTMETERS Self-shielding meter movement					
		Model 1521		Model 1522	
0-10	1000 Ω/volt	10354		10360	
0-15	1000 Ω/volt	10355		10370	
0-25	1000 Ω/volt	10356	$38.10	10375	$42.00
0-50	1000 Ω/volt	10357		10380	
0-150	1000 Ω/volt	—		10390	
0-500	2000 Ω/volt	—		10410	42.50
DC AMMETERS Self-shielding meter movement					
0-5	.010	—		03390	43.95
0-25	.002	—		03420	43.95
DC MILLIAMMETERS Self-shielding meter movement					
0-1	20.0	06811		06710	
0-5	2.5	06812	37.35	06720	41.40
0-10	13.5	06813		06730	
0-25	5.4	06815		06740	
0-50	2.7	06816		06750	
0-100	1.35	06817	39.30	06760	43.05
0-200	.49	06818		—	
0-500	.27	06819		06810	
DC MILLIVOLTMETERS Self-shielding meter movement					
		Model 1521		Model 1522	
0-50	10.0	07013	40.05	07011	43.95
DC MICROAMMETERS Self-shielding meter movement					
0-25	3150.0	—		04560	61.20
0-50	1800.0	04553	50.10	04570	53.85
0-100	1100.0	04554	44.40	04580	48.60
0-200	290.0	04555	40.05	04590	43.95
0-500	90.0	04556	39.30	04600	42.45
AC VOLTMETERS Rectifier type, self-shielding					
		Model 1521		Model 1542	
0-150	1000 Ω/volt	10415	49.50	10420	52.80
0-300	1000 Ω/volt	—		10430	

VU (Volume Level) METERS—Self-shielding. Reference level: 1 mW into 600 Ω line

Scale	Model 1541		Model 1542	
A—Scale	—		10500	67.65
B—Scale	—		10570	

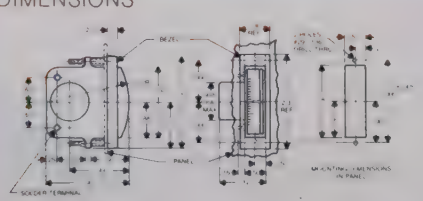
STOCK RANGES NEW MODEL 1552

Range	Resistance (ohms)	2½" Case Style Cat. No.	2½" Case Style Price
AC VOLTMETER Viscous-damped iron vane movement			
0-10	56	10401	
0-15	150	10402	$36.00
0-25	385	10403	
0-50	1428	10407	
0-100	7.74 k	10404	
0-150	15.12 k	10405	36.90
0-250	25 k	10406	
AC MILLIAMMETERS Viscous-damped iron vane movement			
0-10	3995	10361	
0-50	156	10362	
0-100	31	10363	33.00
0-250	6.2	10364	
0-500	1.5	10365	
AC AMMETERS Viscous-damped iron vane movement			
0-1	.38	10366	
0-5	.014	10367	33.00
0-10	.003	10368	

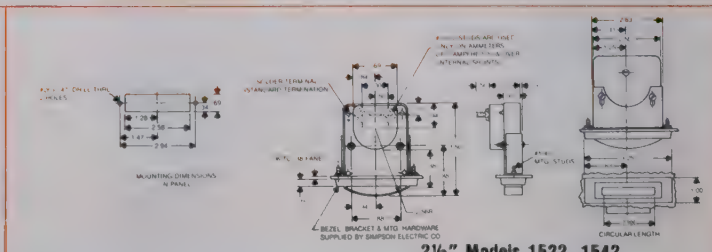
SPECIFICATIONS

Models	1½" 1521, 1541 2½" 1522, 1542	2½" 1552
Accuracy	DC ±2% of full scale; AC rectifier type ±3%	3%
Movement	Self-shielding meter movement	Viscous damped iron vane
Scale Length	1.375" (35 mm) 1.875" (47.6 mm)	1.875" (47.6 mm)
Pointer	Lance, Red	
Case	Dustproof, molded acrylic	
Terminals	Solder (ammeters—stud type)	

DIMENSIONS



1½" Models 1521, 1541



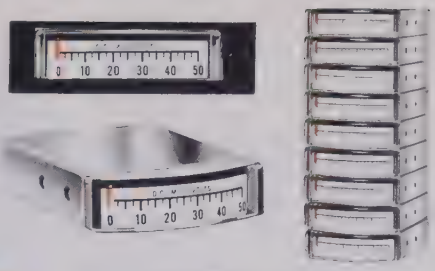
2½" Models 1522, 1542

1½" and 2½" Stackable Edgewise Panel Meters

Simpson's miniature edgewise panel meter has a unique self-shielding core magnet movement that eliminates the protruding barrel which is prevalent in other edgewise meter designs. It lends itself to a meter that is modern and extremely compact. The scale extends nearly to the full width and height of the meter. An optimum scale display area permits the use of large easy-to-read numerals on a horizontal plane.

• For horizontal mounting.

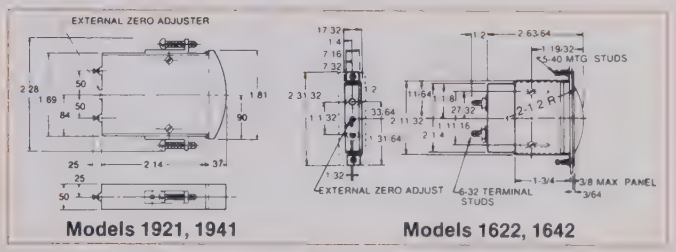
• Vertical mounting available on special order.



STOCK RANGES

Range	Approx. Resistance (ohms)	1½" Case Style Cat. No.	1½" Case Style Price	2½" Case Style Cat. No.	2½" Case Style Price
DC VOLTMETERS Self-shielding meter movement					
Range	**Approx. Ω**	**Model 1921**		**Model 1622**	
0-10		18000		18006	
0-15		18001		18007	
0-25	5000 Ω/volt	18002	$49.20	18008	$51.90
0-50		18003		18009	
0-150		18004		18010	
DC MILLIVOLTMETERS Self-shielding meter movement					
0-50	20.0	18028	51.45	18029	54.75
DC MILLIAMMETERS Self-shielding meter movement					
0-1	18.0	18012		18019	
0-5	2.0	18013	48.60	18020	51.60
0-10	5.0	18014		18021	
0-25	2.0	18015		18022	
0-50	1.0	18016	51.30	18023	54.30
0-100	.5	18017		18024	
0-500	.1	18018		18025	
DC MICROAMMETERS Self-shielding meter movement					
Range	**Approx. Ω**	**Model 1921**		**Model 1622**	
0-25	8470	18030	$62.85	18035	$63.90
0-50	2020	18031	60.90	18036	62.85
0-100	1060	18032	54.00	18037	59.40
0-200	310	18033	51.45	18038	54.75
0-500	63	18034	48.90	18039	52.95
AC VOLTMETERS Rectifier type Self-shielding meter movement					
Range	**Approx. Ω**	**Model 1941**		**Model 1642**	
0-150	5000 Ω/volt	18042	61.20	18043	64.20

Models	1½" 1921, 1941	2½" 1622, 1642
Accuracy	±2% of full scale; AC rectifier types ±3%	
Movement Type	Self-shielding core magnet movement	
Scale Length	1.370" (35.8)	1.85" (47 mm)
Pointer	Lance, Red	
Case Construction	Steel housing with rustproof finish; plastic window; insulated terminals; dustproof construction	
Terminals	Solder type	6-32 studs
Dielectric	1500 volts rms	
Panel Cutout	.525" x 1.718"	.562" x 2.312"
Hardware	Removable brackets with clamping screws	Bezel, bracket lockwashers and nuts



Models 1921, 1941 — Models 1622, 1642

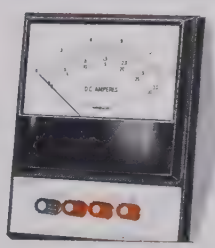
4½" Portable Instruments

MODEL 2100 Desk Top and Lab Bench Multi-Range Portables. measurements in schools, laboratories and industrial plants. Large easy-to-read scale, knife-edge pointer. DC and moving iron-vane AC meters have ±2% full scale accuracy; AC rectifier type meters ±3%. Color-coded binding posts. Overall size: 5.15" x 5.55" x 5.70", with 45° front slope.

RANGES	Catalog No.	Price	RANGES	Catalog No.	Price
DC VOLTMETERS			**AC VOLTMETERS**		
0-1.5-3-30 V	17954	$62.40	**Rectifier Type**		
0-10-25-100 V	17955	64.20	0-3-15-150 V	17956	$89.10
DC AMMETERS			0-30-150-300 V	17957	89.10
0-1.5-3-30 amps	17950	62.40	**Moving Iron-Vane**		
DC MILLIAMMETERS			0-150-300-600 V	17958	82.50
0-1-10-100 mA	17951	62.40	**DC OHMMETER**		
0-25-50-500 mA	17952	62.40	0-1 k-100 k (includes 1.5 V battery and #08376 test leads)	17960	70.35
DC MICROAMMETER					
0-10-50-250 μA	17953	119.55			

Special ranges can be made to meet your specifications

MANUFACTURED IN U.S.A.



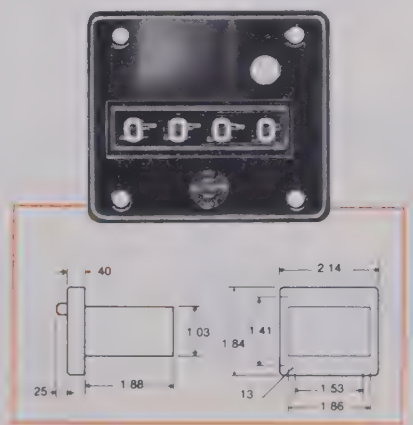
Portable Instrument Kit, without meter, for use with Simpson 4-1/2" meters. Two binding posts.
Cat. No. 17949 . . . . . **$15.30**

Electro-Mechanical Counters

For vending machines, duplicating equipment, packaging machinery, and production line. Instant number switching. Only complete numbers visible.

SPECIFICATIONS

Rated Speed: 10 counts per second
Minimum Pulse Duration: 50 msec "on," 50 msec "off"
Power Consumption: 4.2 watts
Numerals: White on black, 0.2" high, 0.15" wide
Numeral Switching: Ratchet principle, adding one count each time the operating coil is opened
Reset: Pushbutton instantly resets numerals to 0000
Construction: Bezel of rugged thermosetting materials, black matte finish. Heavy steel frame, aluminum cover.



Voltage ±10%	Model	Catalog Number	Price
117 V AC, 60 Hz	103	12643	
6 V DC	104	12641	$44.40
12 V DC	104	12642	

Simpson® Resonant Reed Frequency Meters

High-Accuracy Extra-Rugged Reliable Meters,
All are 3½" size Century Model 2163

Simpson Frequency Meters use tuned steel reeds for indicating AC frequency. The vibrating (resonant) reed is both the measuring and indicating element. Accuracy is virtually unaffected by wide changes in signal magnitude, phased, or wave-form and is basically dependent on only one component, the reed, whose calibration is inherently stable. With one moving part, construction is simple and sturdy.

Model 2163
Same case size as 2153 on page 11

SPECIFICATIONS

Frequency: 50 or 60 Hz nominal
No. of Reeds: 11 (general purpose)
Accuracy: ±0.3% of mid-scale
Temperature Coefficient: −0.017% per °C max.
Operating Voltage: 100 to 150 V AC
Power Consumption: 2 watts max.
Power Required: 2 VA

STOCK RANGES

Hz Range	No. of Reeds	Hz Between Reeds	Cat. No.	Price
3½" Century Model 2163				
47.5-50-52.5	11	.5	03490	**$91.05**
55-60-65	11	1	03496	**91.05**
57.5-60-62.5	11	.5	03491	**84.30**

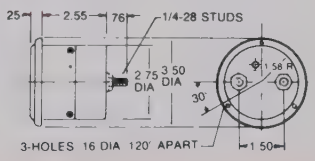
Simpson® Elapsed Time Meters

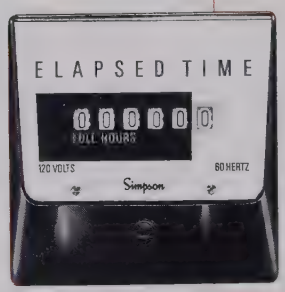
Widely used by research labs, manufacturing plants and broadcast stations . . . to keep life and performance records based on operating time. Choice of Century, Wide-Vue, Rectangular or Round case styling to match other instruments.

SPECIFICATIONS AND RANGES

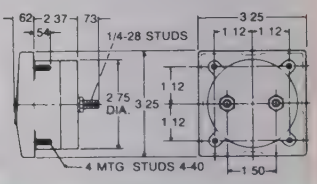
Operating Voltage (±10)	Maximum Indication (hours)	Power Consumption	Accuracy	Model Size	Model No.	Cat. No.	Price
120 V AC, 60 Hz	99,999.9	2.5 watts	synchronous	3½"	55ET	03580	**$49.95**
	99,999.9	2.5 watts	synchronous		1357ET	03595	
	99,999.9	2.5 watts	synchronous		57ET	03590	
	99,999.9	2.5 watts	synchronous		2153ET	17720	
240 V AC, 60 Hz	99,999.9	2.5 watts	synchronous	3½"	55ET	03600	**50.25**
	99,999.9	2.5 watts	synchronous		57ET	03610	
	99,999.9	2.5 watts	synchronous		1357ET	03615	
	99,999.9	2.5 watts	synchronous		2153ET	17721	

3½" MODEL 55ET
Standard Round Styling
(matches Model 45)

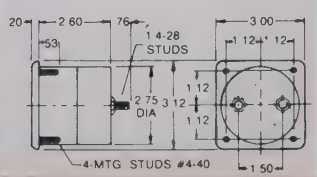




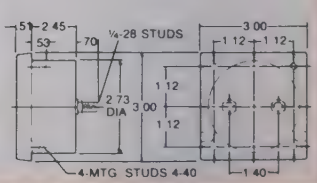
3½" MODEL 1357ET
Wide-Vue Styling



3½" MODEL 57ET
Standard Rectangular
Styling (matches Model 47
rectangular meters)



3½" MODEL 2153 ET
Century Series Styling



Simpson® Solid-State Non-Indicating Controllers

MODEL 5850

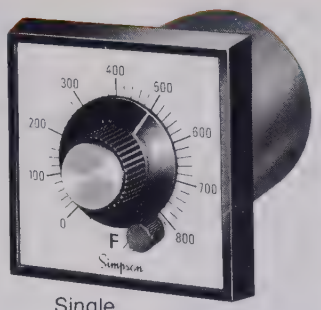
- For precision on-off control with voltage, current and temperature inputs
- Accuracy typically ±1% of full scale
- Rugged sealed, all-metal housing for resistance to moisture and dust
- "On-Off" control, or limit alarm with manual reset
- Solid-state circuitry with 10 amp 120 V AC relay output
- Single or double setpoints available
- Double setpoints overlap; adjustable over 100% of scale
- Setpoint locks are standard
- Remote deviation meter output for ±10% F.S.

AVAILABLE OPTIONS—ask for quotation:

- Time proportioning
- Special ranges
- Hysteresis, non-standard
- Low limit setpoint
- Down scale T/C break protection

RANGES: SSP = single setpoint (High Limit) DSP = double setpoint (Dual High Limit)

Catalog numbers shown in Black are stock; Orange numbers are to order.



Single Setpoint

Double Setpoint

TEMPERATURE

Range in °F	Sensor	Ext. Resis.	SSP Cat. No.	SSP Price	DSP Cat. No.	DSP Price
-25 to 50			31000		31055	
0-150	Thermistor	—	31001		31056	
0-400			31003	$147.45	31050	$252.90
0-800	I/C Type J		31004		31051	
0-1200		0-100 Ω	31005		31052	
0-1600			31006		31054	
0-2200	C/A Type K		31007			

CURRENT 50 mV DC voltage drop

Range	SSP Cat. No.	Price	DSP Cat. No.	Price
0-10 DC μA	31021		—	
0-100 DC μA	31023		31057	
0-1 DC mA	31024		31058	
0-20 DC mA	31026	$147.45	—	$252.90
0-50 DC mA	31027		—	
†4-20 DC mA	31028		31059	
**5 AC A	31029		—	

†Supplied with 0-100% scale **Supplied with 0-150% scale

VOLTAGE (For inputs above 150 V AC, use step-down transformer)

Range	Input Resis.	SSP Cat. No.	SSP Price	DSP Cat. No.	DSP Price
0-50 DC mV	1 kΩ	31036		31060	
0-100 DC mV	2 kΩ	31037		—	
0-10 DC V	200 kΩ	31039		—	
0-100 DC V	2 MΩ	31040		—	
0-10 AC V	85 kΩ min.	31042	147.45	—	252.90
0-150 AC V	1.3 MΩ min.	31008			

DUAL RANGE DSP

0-5 AC A and 0-150 AC V, (0-150% and 0-300 V AC scale), Catalog No. 31062 . . . . . **$177.90**

SPECIFICATIONS

Setpoint: Linear potentiometer with 3.8" scale
Accuracy: Typically ±1% of full scale
Control Mode: On-off standard with ½% fs differential (time prop. available)
Output: Relay rated 10 amps @ 120 V AC resistive
Input Signal: Voltage, current, thermocouple and thermistor
Line Supply: 120 V AC 50-60 Hz 3 VA standard (240 V AC available on special order)
Indication: Output for 500-0-500 DC microamp deviation meter
Ambient Temperature Range: 5°C to 55°C
Cold Junction Compensation: Standard all T/C ranges
T/C Break Protection: Standard all T/C ranges
Weight: SSP 1¼ lbs., DSP 2 lbs.

ACCESSORIES

INPUT TRANSFORMER: 0-150, 300, 600 V AC primary; 150 V AC secondary, Cat. No. 31070 . . . . . **$26.10**
Current transformers listed on page 26.
ADAPTER FOR DIN CUTOUT, Catalog No. 31080 . . . . . **15.75**

THERMOCOUPLES (1)

Cat. No.	Type(3)	Length	Description	Price
31071	I/C	120"	Duplex T/C wire, welded	$26.10
31072	C/A	120"	Junction, terminal lugs	34.50
31073	I/C	120"	.187 dia. x 5" long SS sheath	27.75
31074	C/A	120"	Terminal lugs	39.75
31075	I/C	96"	Bayonet type adjustable T/C for plastics machinery	40.95

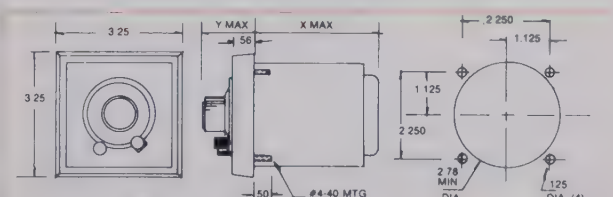
THERMOCOUPLE ACCESSORIES

	Description	
21237	.187 compression fitting (use with 31073 and 31074)	12.60
31076	Bayonet adapter 1/8-27 NPT x 7/8" long (use with 31075)	5.85

THERMISTORS(2)

31077	Free air probe, perforated guard	27.00
31078	General purpose probe	23.35
31079	Surface probe, flat mounting	23.35

NOTES (1) All thermocouples are #20 duplex wire with stainless overbraid and terminal lugs
(2) All thermistors are 15 ft. long with terminal lugs
(3) I/C = Iron Constantan, C/A = Chromel Alumel



	SSP A.C. AMP RANGE	DSP ALL RANGES
X	3.50	4.84	6.41
Y	1.35	1.35	1.55

Simpson "Rugged Seal" Controllers, Meter Relays

3½"
Model 3323AIXA

4½"
Model 3324AIXA

NEWLY IMPROVED 33 SERIES "RUGGED SEAL" CONTROLLERS AND METER RELAYS WITH AMPLIFIED INPUT

For a wide variety of control, alarm, limit applications

The 33 Series instruments on these two pages offer a wide variety of applications in control, alarm and limit use. Photo conductor sensing eliminates all interference with the indicating meter.

These newly-designed meter relays incorporate an amplifier input which drives a rugged high torque pivot and jewel meter. All voltage ranges are 20,000 Ω/volt (50 μa) and all current ranges have a 50 mV drop.

Metal cased "Rugged Seal" construction withstands rigorous environmental conditions. High-gain transistor switch circuit provides accurate switching with a "dead band" of no more than 0.5% of full scale. Fail safe circuitry opens output relays in the event of power failure.

SPECIFICATIONS

Models 3323AIXA, 3324AIXA, 3344AIXA, 3326AIXA

Calibration Accuracy: ±2% of full scale
Control Point(s) Adjustment:
Single: 0-100% of arc
Double: Low limit: 0-95% of arc. High limit: 5-100% of arc. Adjustable to within 4° of each other.
Switching: Within 1% of indication
Differential: "On," "Off" difference is within 0.5% of fs
Repeatability: Within 0.5% fs
Frequency Response: 50-1000 Hz
Auto/Manual Reset: Latching function can be enabled independently for each relay by removing jumpers on terminal block.
Contacts/Output Relay: DPDT relay contacts for each control point except motor load types, SPDT low point. Each set of contacts rated at 5 amps, 115 V AC.
Movement: Self-shielding annular
Power: 108-132 V AC, 50-400 Hz
Operating Temp.: +5°C to +50°C
Storage Temp.: −40°C to +60°C
Rated Circuit-to-Ground Voltage: 250 V rms maximum
Case: Sealed metal case, glass window

33 SERIES METER RELAYS WITH CURRENT AND VOLTAGE INPUT

STOCK RANGES	Approx. Resistance (Ohms)	Single Setpoint (High Limit)		Double Setpoint		Single Setpoint (High Limit)		Double Setpoint		Single Setpoint (High Limit)	
		Cat. No.	Price	Cat. No.	Price	Cat. No.	Price	Cat. No.	Price	Cat. No.	Price
DC MICROAMPERES		3½" Model 3323AIXA				4½" Model 3324AIXA				4x6" Model 3326AIXA	
0-25	2 k	21658	$216.45	21618	$268.50						
0-50	1 k	21659	203.85	21619	255.75	21666	$207.30	21626	$259.35		
0-100	500	21660	197.70	21620	249.90	21667	201.00	21627	252.90	—	
DC MILLIAMPERES											
0-1	50	21661	189.60	21621	241.65	21668	183.75	21628	244.95	21600	$199.05
DC AMPERES											
0-5	.01	21662	193.95	21622	248.10	21669	197.25	21629	251.10	—	
DC MILLIVOLTS											
0-50	1 k	21663	195.15	21623	246.45	21670	197.70	21630	249.90	—	
DC VOLTS											
0-1	20 k	21664	192.00	21624	245.70	21671	195.15	21631	249.90	—	
0-50	1 M	21665	192.00	21625	245.70	21672	195.15	21632	248.70	—	
AC AMPERES		3½" Model 3343AIXA				4½" Model 3344AIXA					
0-5	.01	21673	217.80	21633	269.70	21677	221.25	21637	273.45	—	
AC MILLIVOLTS											
0-100	2 k	21674	223.50	21634	277.50	21678	228.30	21638	280.05	—	
AC VOLTS											
0-10	200 k	21675		21635		21679		21639		—	
0-150	3 M	21676	202.05	21636	253.80	21680	205.65	21640	257.55	—	
0-300	6 M	21681		21641		21682		21642		—	

33 SERIES TEMPERATURE CONTROLLERS

Model 3324AIXA

Simpson's new high impedance, solid-state circuit eliminates thermocouple lead length adjustments. Thermocouple resistance may be anywhere from 0 to 100 ohms. All ranges use Simpson's rugged 1 milliamp pivot-and-jewel meter movement. Electronic cold junction compensation is standard.

RANGES

Temperature Range	Thermocouple Type	SSP Catalog No.	SSP Price	DSP Catalog No.	DSP Price
−50 to +275°F	Iron Constantan	21650	$221.10	21610	$278.10
0 to 300°F		21651		21611	
0 to 500°F		21652		21612	
0 to 750°F		21653		21613	
0 to 1000°F		21654		21614	
0 to 1500°F	Chromel/ Alumel	21655	221.10	21615	273.15
0 to 2000°F		21656		21616	
0 to 2500°F		21657		21617	

Thermocouples are not supplied. Available separately from list on page 26.

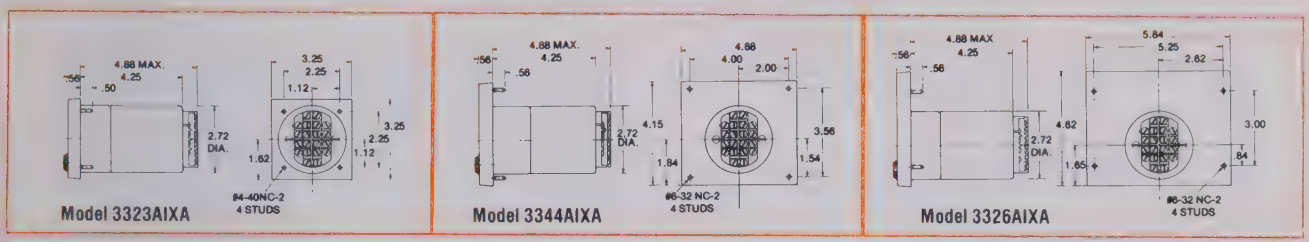
33 SERIES MOTOR LOAD METER RELAYS

Model 3344AIXA

Now! Instrument can be field adjusted to match the rated load current for a motor with the 100% mark on the scale. Built-in adjustment potentiometer eliminates winding turns on current transformer. Built-in time delay eliminates the need for external time delays or manual overrides. Standard delay: 5 sec. Programmable 0-5 sec, using external resistor. Factory adjustable to 20 sec. Time delay occurs only when pointer is upscale of the setpoint, may be disabled with external jumper. No time delay on low setpoint. Scale: green 0-100%, red 100%-150%.

Scale	Range F.S.	Single Setpoint (High Limit) Cat. No.	Single Setpoint (High Limit) Price	Double Setpoint Cat. No.	Double Setpoint Price
0-150%*	10 V AC	21684	$213.45	21644	$265.20
0-150%**	5 Amp AC	21683	229.65	21643	281.40

*Use with Model 186 current transformers—see page 26.
**Use with donut-type current transformers—see page 26.

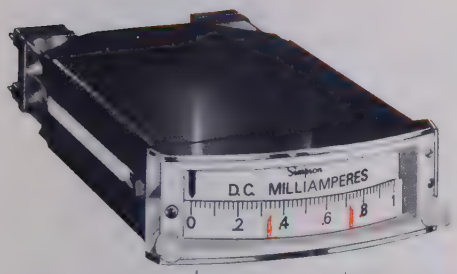


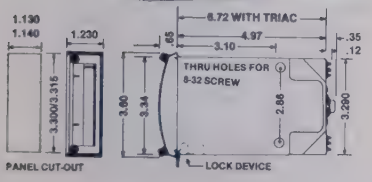
Simpson® 3½" Edgewise Controllers

MANUFACTURED IN U.S.A.

Compact Design Offers All These Features

- Mode indication lamps
- Front panel mounting
- Integral mounting lock
- Removable set knobs
- Double or single setpoints
- Horizontal mounting, vertical on special order
- Other ranges—write for details





OPTIONAL RELAY ASSEMBLY KIT. Includes one DPDT relay and connector rated 5 amperes at 120 V AC resistive each pole. Mechanical Life: 1,000,000 operations at rated load.
Catalog No. 16898 . . . . . **$14.40**

OPTIONAL TRIAC SWITCH MODULE

Useful where surges or chatter of mechanical relays are undesirable. Our module fits in the standard edgewise relay socket and features:

- Zero firing circuitry
- Optical isolation of signal and load
- 4 amps @ 120 V AC 60 Hz, switch capacity at 25°C
- Normally open single pole-single throw

Catalog No. 16899 . . . . . **$43.05**

RANGES

DC MODEL 3623XO	Catalog No.	Price
0-50 microamps DC SSP‡	19314	$186.60
0-50 microamps DC DSP‡	19315	238.20
0-100 microamps DC SSP‡	19316	180.00
0-100 microamps DC DSP‡	19317	232.20
0-1 milliamps DC SSP	19318	172.20
0-1 milliamps DC DSP	19319	224.40
0-50 millivolts DC SSP	19320	180.45
0-50 millivolts DC DSP	19321	229.35

‡Taut-band movement

AC MODEL 3643XO	Catalog No.	Price
0-5 amperes AC SSP	19323	$216.15
0-5 amperes AC DSP	19324	252.60
0-10 volts AC SSP*	19325	185.10
0-10 volts AC DSP*	19326	236.85
0-150 volts AC SSP	19327	185.10
0-150 volts AC DSP	19328	237.00

SSP—Single setpoint High Limit DSP—Double setpoint

*For use with Model 186 transformer, see page 26

SPECIFICATIONS

MOVEMENT:
Type: Self-shielding core type
Accuracy: ±2% of full scale standard, ±1% special
Maximum Sensitivity: 10 DC microamps
Minimum Thermocouple Span: 300°F

CONTROL FUNCTIONS:
Load Switching: DPDT relay or triac available for each setpoint
Switching Accuracy: Within 1% fs of setpoint indication
Dead Band: "On," "off" differential less than .5% of fs

SETPOINTS:
Knob Adjustable: Screwdriver adjust with knobs removed
Single Setpoint: High limit standard, adjustable 0-100% fs
Double Setpoint: Low limit 0-98% of full scale, high limit 2-100% of full scale. Setpoints are adjustable within 2°
Input Power: 115 V AC single phase, 50-500 Hz. 6 VA (double setpoint), 4 VA (single setpoint)
Operating Temp.: +5°C to +50°C
Storage Temp.: −40°C to +60°C

Simpson® Miniature Strip Chart Recorders

Model 2750-2 Single Channel Recorder

Model 2750-2. Rugged pivot and jewel meter movement for superior shock/vibration capability. Provides 1.5% recording accuracy. 3 chart speeds—60 mm (2.36″), 20 mm (.79″) and 10 mm (.39″) per hour. Impression rates are 2-6-12 seconds. Fit standard DIN/IEC panel. Specially formulated pressure sensitive chart paper produces clean, clear trace—does not smudge, fog or blur with age. You get up to 1600 hours' recording time per roll of chart paper. The 2750-2 can be connected for either 120 or 240 volt operation and has standard quick-connect rear terminals.

Catalog numbers shown in Black are standard. Numbers in Orange are special order ranges.

Ranges	Res. Ohms	Catalog Number	Price	Ranges	Sens.	Catalog Number	Price
0-10 µA DC	5 k	22130**		0-10 V DC		22137	
0-50 µA DC	1 k	22131**	$296.00	0-50 V DC	2000 Ω/V	22138	$265.00
0-100 µA DC	0.5 k	22132**		0-100 V DC			
				0-250 V DC			
0-500 µA DC	400	22133					
0-1 mA DC	200	22134		0-5 A AC*‡		22141	
0-5 mA DC	10		265.00	0-10 V AC			
0-10 mA DC	5			0-25 V AC	2000	22127	275.00
0-1 A DC	.05			0-50 V AC	Ω/V		
0-50 mV DC†	500 Ω/V	22135		0-150 V AC	approx.	22142	
0-1 V DC	2000 Ω/V	22136	265.00	0-250 V AC			
0-5 V DC	2000 Ω/V			100-130 V AC	2000 Ω/V	22143**	296.00

New DC Operated Units. Use two 9 V alkaline batteries in parallel or external 7 to 15 VDC supply.

0-1 DC mA	200	22161	$325.00	0-10 DC V	2 KΩ/V	22168	$325.00
0-50 DC mV	500 Ω/V	22165		0-5 AC A*	2 KΩ/V	22172	
0-1 DC V	2 KΩ/V	22166		0-150 AC V	2 KΩ/V	22175	

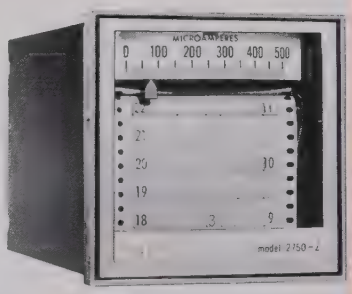
† Catalog No. 22135, 0-50 millivolt DC may be used with either portable shunts (from 1 ampere to 200 amperes) or switchboard shunts (from 100 amperes to 3000 amperes). All shunts are shown on page 26.

*This range is a basic 0-10 volt AC recorder, but is supplied with a 0-5 ampere scale already mounted. Requires a Model 186 current transformer (Catalog #01312), see page 26. Other current transformers for up to 50 amperes with 10 V AC output are also listed. (Matching range scale plates are available.)

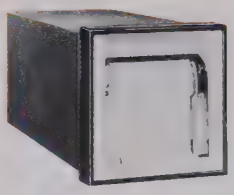
‡For ranges from 0-50 amperes to 0-1000 amperes, order #22141 recorder, plus #01312 transformer, plus appropriate donut transformer from listing on page 26. (Matching range scale plates are available.)

**These units have case extender at rear. Size is same as 2760-2 on opposite page.

SPECIFICATIONS



Recording Accuracy: ±1.5% of full span
Meter Movement: Rugged pivot and jewel
Response Time: <2 seconds
Recording Trace: Single channel, 1 impression every 2, 6 or 12 seconds
Chart Paper: Pressure sensitive
Length: 16 meters (52 ft.). Up to 1600 hours' recording
Width: 70 mm (2.76″)
Recording Width: 55 mm (2.16″)
Markings: 50 divisions standard
Chart Gear Speeds: 60 mm/hour (2.36″) is standard. Cams for 10 mm (.39″) and 20 mm/hour (.79″) are supplied
Rated Circuit-to-Ground Voltage of the Measuring Circuit: 250 VAC RMS (sinewave) (350 V peak)
Take-up Reel: Built-in, automatic, motor driven
Operating Temperature: −0°C to +40°C
Reference Conditions: Temperature: +23°C ±1°C
Relative Humidity: 30 to 60%
Power Requirement: 120/240 V ±10%, 60 Hz, 1.6/3.2 V A (50 Hz available on special order)
Meter/Recorder Scale: 60 mm (2.36″). 50 divisions standard
Dimensions: see outline drawings on next page
Front Panel: 96 x 96 mm (3.78 x 3.78″) DIN standard
Projection (rear panel): 180 mm (7.09″)
Terminals: Standard quick-connects 6.35 mm (.250″) x .8 mm (.032″)
Net Weight: 1.3 kg (2.9 lbs.)



Model 2755 10 Channel Event Recorder

Durable, rugged electromechanical instruments for inkless, continuous recording the on/off status (rather than magnitude) of ten separate sources. Inkless, pressure-sensitive chart paper continuously passes the ten recording pens. It is possible to determine from the chart the actual time an event occurred, the duration of time the event lasted and the sequence of events recorded on several channels. Up to 32 days' recording can be made at the 20 mm-per-hour chart speed. Quick selection of two built-in chart speeds, 20/120 mm-per-hour, is provided by slide switch. Interchangeable gearboxes permit speeds to 600/3600 mm-per-hour.

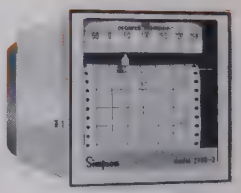
Supplied complete with chart paper, panel mounting bracket, 60″ three-wire line cord and operator's manual.

SPECIFICATIONS

Accuracy: 10 millisecond (nominal) pen response
Chart Speeds: (switch selectable) 20/120 mm-per-hour (0.79/4.72 inches-per-hour)
Impression Rate: Continuous
Chart Paper: Pressure-sensitive, 2.6″ wide, 50′ long
Take-up Reel: Built in. Automatic, motor driven
Motor Drive: Synchronous, 120 V AC ±10%, 60 Hz.
Size: 3.78″ x 3.78″ x 9.38″ **Weight:** 4 lbs. approx.

Input	Power per Solenoid	Cat. No.	Price
10 channels, 6 V DC	1.2 watts	22203	$675.00
10 channels, 12 V DC		22202	
10 channels, 24 V DC		22201	
10 channels, 115 V AC	2.2 VA	22200	
10 channels, 24 V AC		22204	

Model 2760-2 Single-Range Temperature Recorder



These rugged units record for over a month unattended. Inkless, pressure-sensitive paper. Chart speeds are 10, 20 or 60 mm/hr. Accuracy is ±1.5% fs.

Amplifier input on thermocouple ranges allows 0 to 100 ohms of lead resistance without adjustment.

Ranges	Thermocouple Types**	Cat. No.	Price
−50 to +250°F	J	23065	$395.00
0 to +300°F	J	23066	
0 to +500°F	J	23057	
0 to +800°F	J	23058	
0 to +1500°F	K	23059	
0 to +2500°F	K	23067	

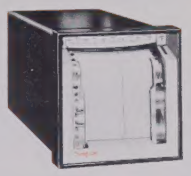
**Thermocouple not supplied. See offering this page.
Type J — Iron Constantan (I/C)
Type K — Chromel Alumel (C/A)

Model 2761 Single Channel, 3-Range Temperature Recorder

Model 2761. Single channel, 3-range temperature recorder. Range coverage is from –50 to +250°F in 100° spans. The recorder is supplied with individual phono jacks for 3 separate temperature sensors. Inputs and ranges are selected by means of two rear panel 3-position switches. This added capability permits monitoring and recording three separate temperature locations without relocating the sensor.

Although the 2761 provides broad range coverage, the individual ranges allow temperature resolution to 1°F at accuracies of ±3° maximum. The 2761 is supplied with an AC synchronous motor for 115 V, 60 Hz operation. Standard chart speed is 20/120 mm/hr. with a clamp rate of once every 6 seconds. The scale and chart paper are graduated directly in degrees Fahrenheit for all ranges, which allows fast, accurate readings without interpolation.

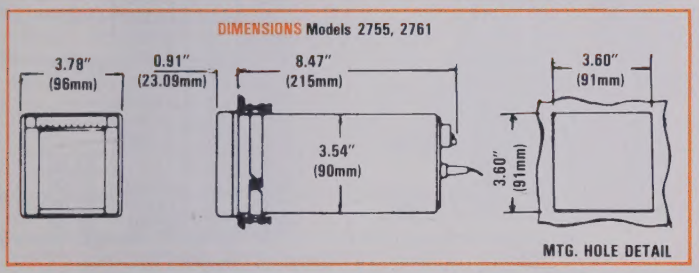
MODEL 2761, –50° to +50°F; +50° to +150°F; +150° to +250°F (3 ranges, switch selectable), complete with chart paper, panel mounting bracket, 60″ 3-wire line cord, 1 #00010 temperature sensor and operator's manual.
Catalog No. 23151 . . . . . **$425.00**

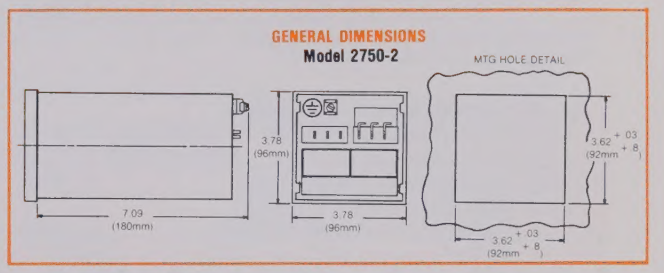


SPECIFICATIONS

Recording:
Dot Impressions on Chart Paper: Every 6 seconds
Chart Paper Width: 2.56″
Recording Width: 2.32″
Length of Paper on Roll: 50′
Chart Speed: 20 or 120 mm/hr.
Time Imprint: 1-24
Linear Divisions: 50
Running Time at Standard Chart Speed: 32 days

Meter Movement:
Taut Band Suspension Response Time: 2 sec.
Sensitivity: 8.4 μA
Resistance: 1780 ohms
Temperature Measuring: 3 Ranges, switch selectable: –50° to +50°F; +50° to +150°F; +150° to +250°F
Accuracy Recording: ±3°F
Sensing: 3 probes, switch selectable thermistor type
Power Input: 105 to 135 V AC
Frequency: 60 Hz
Power Consumption: 2 VA
Weight: 4-1/2 lbs.





ACCESSORIES For Various Models

Item	Cat. No.	Price
Portable carrying handle (2750, 2755, 2760, 2761)	22392	$40.75
Plastic window for direct paper feedout (2761)	22395	9.75
Line cord, 3 wire, 60″, w/pigtail terminal (2755, 2761)	22394	8.55
Line cord, 3 wire, 60″, w/117 V AC ground plug (2755, 2761)	22393	9.45
Gear unit for 20/120 mm/hr. speeds (2755, 2761)	22300	37.65
Gear unit for 30/180 mm/hr. speeds (2755, 2761)	22301	55.05
Gear unit for 60/360 mm/hr. speeds (2755, 2761)	22302	55.05
Gear unit for 100/600 mm/hr. speeds (2755, 2761)	22303	55.05
Gear unit for 300/1800 mm/hr. speeds (2755)	22304	83.85
Gear unit for 600/3600 mm/hr. speeds (2755)	22305	83.85

TEMPERATURE SENSORS

Description	Cat. No.	Price
Free air temp. probe (for 2761, 2762)	00789	$28.25
Surface temp. probe (for 2761, 2762)	00790	22.50
15′ Lead and thermistor (for 2761, 2762)	00010	25.00
30′ Lead and thermistor (for 2761, 2762)	00216	25.00
50′ Lead and thermistor (for 2761, 2762)	00415	26.75
100′ Lead and thermistor (for 2761, 2762)	00416	32.50
150′ Lead and thermistor (for 2761, 2762)	00417	40.75
I/C Thermocouple, 10Ω Stainless, 0.187″ X 5.0″, 10′ leads (for 2760, 2760-2)	23245	38.60
I/C Thermocouple, 10Ω Stainless overbraid, 235″, 20 ga. (for 2760, 2760-2)	21224	59.40
I/C Thermocouple, 10Ω Glass cloth overbraid, 34″, 30 ga. (for 2760, 2760-2)	21223	10.15
I/C Thermocouple, 10Ω Glass cloth overbraid, 137″, 24 ga. (for 2760, 2760-2)	21222	12.10
C/A Thermocouple, 10Ω Stainless, 0.187 X 5.0″, 10′ leads (for 2760, 2760-2)	23246	38.60

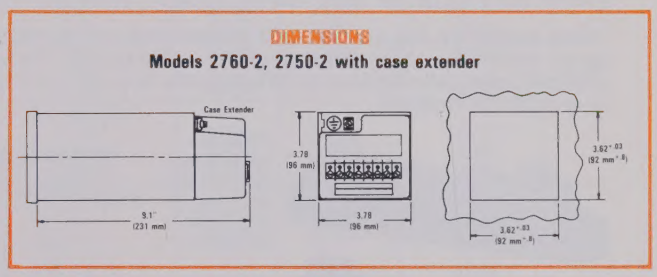


CHART PAPER
For Models 2750-2, 2755, 2760-2, 2761,

For Series	Calibration: Speed	Calibration: Division	Cat. No.	Price/10 Roll Box
2750-2	—	30 div.	22156	$37.37
		50 div.	22155	
2755	20 mm/hr.	—	22380	38.55
	30 mm/hr.	—	22381	
	60 mm/hr.	—	22382	
	100 mm/hr.	—	22383	
2761	20 mm/hr.	—	23237	
	30 mm/hr.	—	23238	

CALL YOUR DISTRIBUTOR FOR 2750, 2760 CHART PAPERS

For Series	Thermocouple Type	Temperature Range	Cat. No.	Price/10 Roll Box
2760-2	J (I/C)	–50° to +250°F	23261	$38.55
	J (I/C)	0° to +300°F	23262	
	J (I/C)	0° to +500°F	23263	
	J (I/C)	0° to +800°F	23264	
	K (C/A)	0° to +1500°F	23265	
	K (C/A)	0° to +2500°F	23266	

CONTACT LOCAL DISTRIBUTOR FOR PREVIOUS MODELS' CHART PAPER

Simpson® Meter and Controller Accessories

MANUFACTURED IN U.S.A.

Stock Thermocouples

Stock thermocouples are iron-constantan type, calibrated to 5 or 10 ohms ±1% as indicated in table.

Types 21221 and 21224 are iron-constantan thermocouple wire in a stainless steel overbraid for rugged service application where flexing or abrasion would cause deterioration of standard thermocouples.

Types 21222 and 21223 are iron-constantan thermocouples with a glass cloth overbraid. These thermocouples are suited for most general purpose use or for permanent mounting in protected sheaths or conduit.

Cat. No.	Type*	Resistance	Overbraid**	Length	Gage	Price
21221	I/C	5 ohms	SS	162″	20	$33.45
21222	I/C	10 ohms	GC	137″	24	12.10
21223	I/C	10 ohms	GC	34″	30	10.15
21224	I/C	10 ohms	SS	325″	20	59.40
21231	C/A	10 ohms	SS	154″	20	37.20
21232	C/A	10 ohms	GC	90″	24	22.25
21230	C/A .42 ohm inconel protection tube, 1/4″ x 2.0″					29.10
21233	C/A .64 ohm inconel protection 3/16″ x 12″ Disconnect Plug					33.75
23245	I/C, 3.6 ohms resistance with 5″ x .187″ dia. SS sheath and 10′ leads					38.60
23246	C/A, 6.5 ohms resistance with 5″ x .187″ dia. SS sheath and 10′ leads					38.60

*I/C—Iron-Constantan, C/A—Chromel Alumel
**SS—Stainless Steel, GC—Glass Cloth

Cat. No.	THERMOCOUPLE ACCESSORIES	
21234	10 ohm Extension Wire Kit 43′ (use with either	23.10
21235	10 ohm Extension Wire Kit 17′ 21230 or 21233)	7.75
21236	Disconnect Jack (use with 21233)	19.80
21237	Compression Fitting SS 3/16″ dia. (use with 21233,23245 or 23246)	12.60

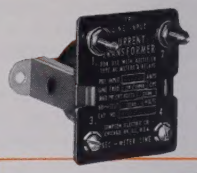
Current Transformers

Designed for use with 0-10 volt AC meters. They convert meter relays to AC current control units. Transformer may be located remotely from indicating meter. Ranges from 0-50 milliamperes up to 0-50 amperes are available.

Frequency range: 50 Hz to 5 kHz. Accuracy: ±2%. May be used with any 0-10 V AC rectifier type voltmeter with a sensitivity of approx. 2000 Ω/V. Not for use in circuits where sustained overloads are possible.

Model 186

—For Use With 0-10 V AC Meters, Controllers and Recorders



Range	VA	Cat. No.	Price
0-1 amp	0.42	01308	
0-2 amp	0.54	01309	
0-3 amp	0.66	01311	
0-5 amp	0.75	01312	
0-10 amp	1.45	01314	
0-15 amp	1.05	01315	20.55
0-20 amp	1.04	01316	
0-25 amp	1.50	01317	
0-30 amp	1.10	01318	
0-40 amp	1.09	01319	
0-50 amp	1.90	01321	
0-50 mA	0.40	01294	
0-100 mA	0.50	01295	
0-200 mA	0.37	01296	$20.55
0-300 mA	0.48	01303	
0-500 mA	0.53	01304	
0-750 mA	0.37	01307	17.40

Donut Current Transformers

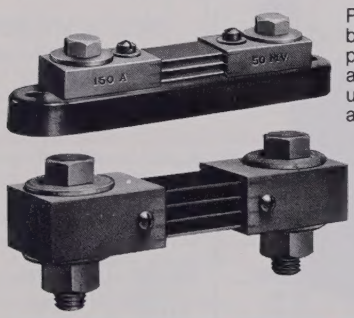
—For Use With AC Ammeters

Inserted one turn primary type for use with switchboard and panel ammeters where external transformers are required. Rated at 2 VA. Have 2′ leads.

Ampere Ranges Primary	Secondary	Cat. No.	Price
50	5	01293	
75	5	01306	
100	5	01297	
150	5	01298	$17.40
200	5	01299	
250	5	01313	
300	5	01300	
400	5	01305	
500	5	01301	17.40
600	5	02303	17.40
750	5	02459	22.05
1000	5	02304	31.50

External Portable and Switchboard Shunts—For Use With DC Ammeters

These shunts are adjusted for a 50 millivolt drop for use with switchboard and panel ammeters where external shunts are required. Portable shunts have phenolic base and supply up to 200 amperes. Accuracy ±1%, 5″ leads (0.065 Ω resistance) included.



Phenolic base is supplied on portable shunts up to 200 amperes

Switchboard type—100 through 3000 amps

PORTABLE SHUNTS

Amps	Cat. Number	Price
1	06700	
5	06703	
10	06704	
15	06705	
25	06707	
30	06708	$24.15
50	06709	
75	06711	
100	06713	
150	06714	
200	06715	

SWITCHBOARD SHUNTS

Amps	Cat. Number	Price
100	06500	$ 24.15
150	06503	25.95
200	06504	25.95
250	06505	25.95
300	06506	25.95
400	06507	31.35
500	06508	37.05
600	06509	43.05
750	06510	55.05
800	06511	58.20
1000	06512	70.65
1200	06513	83.85
1500	06514	103.95
2000	06515	115.20
2500	06516	145.35
3000	06517	171.75

Simpson external multipliers are available for immediate delivery from your local distributor in the ranges listed below. Other intermediate ranges are available on special order: DC volts to 5000; AC volts to 1000. Send your specifications for a quotation.

AC VOLTS—166 Ohms/Volt

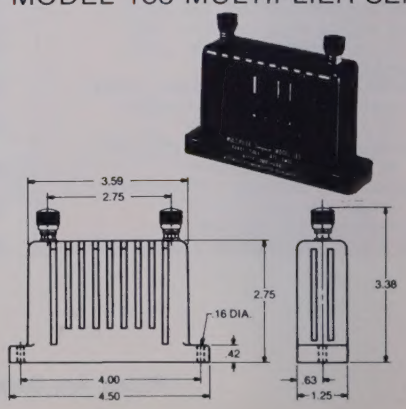
Range	Multiplier Impedance (Ω) at 60 Hz	Multiplier Volt Drop	Meter Volt Drop	Cat. No.	Price
0-500	58,333	350	150	08562	$19.50
0-600	75,000	450	150	08563	21.75
0-750	100,000	600	150	08564	24.00
0-1000	141,666	850	150	08565	28.20

DC VOLTS—2000 Ohms/Volt

Range	Multiplier Resistance Megohms	Meter Sensitivity DC μA	Cat. No.	Price
0-500	1	500	08552	$16.05
0-750	1.5	500	08553	16.65
0-1000	2	500	08554	16.65
0-1250	2.5	500	08555	16.65
0-1500	3	500	08556	18.15
0-2000	4	500	08557	18.15
0-2500	5	500	08558	18.60
0-3000	6	500	08559	18.60
0-4000	8	500	08560	19.65
0-5000	10	500	08561	21.60

FREQUENCY — for 240 V input, order Catalog No. 08551 . . . . . **$14.25**
See Frequency Meters, page 16.

MODEL 183 MULTIPLIER SERIES



Simpson® Ana-Led Solid-State Meter/Controllers

50 LED Wide-Bar ANA LED III Model 7528

MANUFACTURED IN U.S.A.

SPECIFICATIONS

Accuracy: ±2% fs
Resolution: 1 part in 50
Linearity: ±0.5% fs
Sensitivity: 50 mV current ranges, 20 kΩ/V voltage ranges

Response Time:	**7527**	**7528**
DC Ranges	15 msec	13.2 msec to 64% fs
AC Ranges	<1 msec	180 msec to 63% fs

AC Rejection (DC Ranges): **7527,** 20 dB @ 120 Hz sinewave, **7528,** 13.5 dB @ 60 Hz sinewave
AC Freq. Response: 7527, flat to 1000 Hz sinewave inputs, **7528,** 20 Hz to 10 kHz, ±1% fs
Rated Circuit-to-Ground Voltage: (per ANSI 39.5, April, 1974 specs) 250 V rms, 353.5 V peak or DC
Overload Capability: 10 times full scale or up to 250 V rms max.
Operating Temperature: 0-50°C. **Temp. Coefficient:** ±0.1% of fs/°C
Recorder Output: Zero left, 0-5 V DC @ 1 mA max. Zero center, 2.5-0-2.5 V DC @ .5-00.5 mA max.
Power Requirements: 7527, dual ±6 V supply @ 200 mA each side. Voltage accuracy, +.6 V, −.1 V. Regulation, 2%, no load to full load. Allowable ripple, 60 mV p-to-p. **7528,** dual ±6 V supply @ +400 mA, −300 mA. Voltage accuracy, 6 to 6.3 V. Regulation, 1% no load to full load. Allowable ripple, 20 mV p-to-p.
Signal Isolation: Provided by external power supply transformer or battery supply
Control Signals: Amplified signal and reference voltages for driving setpoint module, all ranges AC and DC, except 7527, all DC ranges only

SETPOINT MODULES

Provide on/off or limit control by comparator action. Up to 50 modules can be used with each ANA LED. Each module is rated up to 1/2 amp at 24 V DC. For higher current or voltage control, add optional relay shown below. High-limit control modules are standard and are convertible to low-limit control in the field by jumper changes. Overall dimensions are: 1.56″H x 2.50″W x 3.18″D without relay. Through panel cutout: 1.44″H x 2.18″W. Front or rear panel mounting.

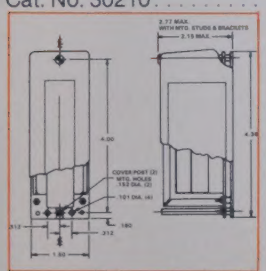
Setpoint module

Digital Setpoint Module with 2 digital thumb switches. Switching Accuracy: ±1%. Resolution: 1 part in 100. Cat. No. 30205 . . . . . **$78.50**

Analog Setpoint Module with potentiometer, 0-100 scale. Accuracy: 2% fs. Cat. No. 30208 . . . . . **50.25**

OUTPUT RELAY

DPDT Relay, 5 amp 115 V AC with plug-in connector, Cat. No. 30210 . . . . . **14.50**



ANA LED POWER SUPPLY

Designed for use with the ANA LED meter. Supplies dual ±6 V DC. Mounting can be remote or to rear of meter.

Input	Type	Cat. No.	Price
120 V	Enclosed	31111	$58.75
120 V	Open	31110	34.75
240 V	Enclosed	31112	58.75
240 V	Open	31113	34.75

—Prices are Suggested and Subject to Change Without Notice—

- Instantaneous response without overshoot
- Easy-to-read 5″ linear LED scale follows input changes
- Analog output for or up to 50 controller modules
- ANA LED III Model 7528 has 50 LED wide-bar display for improved readability

The ANA LED is the first true solid-state analog panel meter. A row of LED bars displays an analog signal in clear, easy-to-see readouts. Separate indicators show reverse polarity, overrange and power "on" or zero.

This compact device is virtually immune to vibration and shock. Ideal for use in general testing and in-process equipment, as well as medical electronic instruments, and trend monitors.

The ANA LED provides signals to operate remotely mounted setpoint modules used in control applications. One ANA LED meter can be used with up to 50 setpoint modules. Two power supplies are available — an open type OEM version and an enclosed version. Either can be mounted directly on the back of the ANA LED.

In addition to a wide choice of standard stock ranges listed below, custom ranges, vertical scales, expanded scales, linear display of non-linear signals, non-linear display of linear signals and other special designs are available.

Model 7527, for thru-panel mounting **$135.45**
Model 7527SM, for surface mounting **135.45**

ANA LED III, 50 LED wide-bar display
Model 7528, for thru-panel mounting **135.45**

Open 240 V, Cat. No. 31112 . . . . . **34.75**
Enclosed 240 V, Cat. No. 31113 . . . . . **58.75**

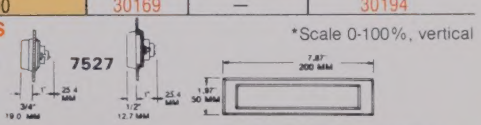
Catalog numbers shown in Black are in stock; Orange numbers are to order.

STOCK RANGES	Catalog Number: Thru-Panel Mounting Model 7527	Catalog Number: Thru-Panel Mounting Model 7528	Catalog Number: Surface Mounting Model 7527SM
DC Volts			
0-1	30162	31093	30187
0-10	30163	31094	30188
0-100	30164	31095	30189
0-150	30165	31096	30190
0-250	30166	31097	30191
DC Millivolts			
0-50	30154	31090	30179
50-0-50	30155	31091	30180
0-100	30156	31092	30181
DC Milliamperes			
0-1	30157	31085	30182
0-5	30158	31086	30183
0-10	30159	31087	30184
0-20	30160	31088	30185
0-50	30161	31089	30186
4-20*	—	31103	—
DC Microamperes			
0-1	30150	31081	30175
0-10	30151	31082	30176
0-50	30152	31083	30177
0-100	30153	31084	30178
AC Volts			
0-1	30170	31098	30195
0-10	30171	31099	30196
0-100	30172	31100	30197
0-150	30173	31101	30198
0-250	30174	31102	30199
AC Millivolts			
0-50	30167	—	30192
50-0-50	30168	—	30193
0-100	30169	—	30194

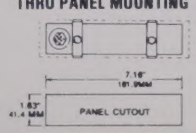
*Scale 0-100%, vertical

DIMENSIONS

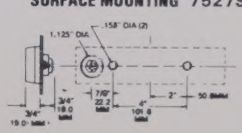
7528 7527



THRU PANEL MOUNTING



SURFACE MOUNTING 7527SM



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